

# Driving Sustainability

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# Driving Sustainability

Keppel is a multi-business company committed to providing robust solutions for sustainable urbanisation. Focused on being at the forefront of our chosen industries, we are sharpening our competitive edge and developing new platforms for growth, while placing sustainability at the heart of our strategy and operations.

## Vision

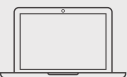
A global company at the forefront of our chosen industries, shaping the future for the benefit of all our stakeholders – Sustaining Growth, Empowering Lives and Nurturing Communities.

## Mission

Guided by our operating principles and core values, we will execute our businesses in Offshore & Marine, Property, Infrastructure and Investments profitably, safely and responsibly.

## Operating Principles

- 1 Best value propositions to customers.
- 2 Tapping and developing best talents from our global workforce.
- 3 Cultivating a spirit of innovation and enterprise.
- 4 Executing our projects well.
- 5 Being financially disciplined to earn best risk-adjusted returns.
- 6 Clarity of focus and operating within our core competence.
- 7 Being prepared for the future.



View our report online:  
[www.keppcorp.com](http://www.keppcorp.com)

## Letter to Our Stakeholders

Anchored by strong values, we drive our businesses to contribute positively to the communities where we operate.



**Loh Chin Hua**  
Chief Executive Officer

### Dear Stakeholders,

Sustainability is integral to Keppel's strategy and operations. We are anchored by strong values, and drive our businesses to contribute positively to the communities where we operate.

The UN Sustainable Development Goals defined global priorities for governments, businesses and civil society to create a sustainable future. As a Group committed to providing solutions for sustainable urbanisation, we work closely with our stakeholders in addressing these priorities.

Keppel adheres to the principles and guidelines of the Code of Corporate Governance 2012 issued by the Monetary Authority of Singapore (MAS). The MAS has recently set up a council to review the Code. We will continue to monitor the latest developments and implement governance best practices that support long-term sustainable performance.

The Paris Agreement has been ratified by more than 140 countries and reflects firm international resolve to strengthen the global response to the threat of climate change. In Singapore, the government has outlined a Sustainable Singapore Blueprint to reduce resource consumption, carbon emissions and waste generated by industries, and more recently, announced impending legislation which will give new impetus for businesses to be more energy and water efficient. We support efforts by the international community and the Singapore government in tackling the challenges brought about by environmental degradation and climate change.

We are committed to minimising our environmental impact, and we aim to achieve a 16% improvement in our carbon emissions from 2020 business-as-usual levels via a robust Group-wide carbon management strategy. Energy efficiency initiatives implemented across the Group in 2016 are estimated to have saved 519,026 GJ of energy, equivalent to 5.6% of the Group's total energy consumption in 2016. This translates to an estimated \$27 million in cost savings, and an avoidance of

approximately 62,000 tonnes of carbon dioxide emissions. Cumulatively, the Group has saved close to 2 million GJ of energy over the past five years, which translates to a total of about \$117 million in cost savings, and an avoidance of approximately 230,000 tonnes of carbon dioxide emissions over this period.

Keppel has a Health, Safety and Environment Policy, which all our employees and suppliers are expected to abide by. Despite our strong emphasis on safety, we suffered seven fatalities in 2016. We have investigated these incidents thoroughly and rigorously, and instituted measures to prevent recurrence.

Recognising the importance of integrating our sustainability principles across our supply chain, we put in place the Keppel Supplier Code of Conduct, which entered into effect in end 2016. The Code describes our expectations of those who intend to do business with us. Suppliers of Keppel Group companies are expected to abide by the Code, which covers areas pertaining to business conduct, environmental management, labour practices, as well as safety and health.

Keppel has been producing sustainability reports annually since 2010. Our reports draw on internationally-recognised frameworks of reporting, including the Global Reporting Initiative Standards. In 2016, the Singapore Exchange (SGX) introduced sustainability reporting on a “comply or explain” basis for any financial year ending on or after 31 December 2017. This report has been brought in line with the new SGX requirements, a year ahead of the deadline, and is externally audited in accordance with the AccountAbility AA1000 Assurance Standard 2008. All listed Keppel entities have also commenced sustainability reporting this year.

We are encouraged that our sustainability efforts have been recognised. Keppel was included among the top 10 constituents in all four sustainability indices launched by the SGX in 2016. We continued to be recognised in the Dow Jones Sustainability Index and the MSCI

Global Sustainability Index as one of the most sustainable companies in our industry. Keppel Corporation also received the Singapore Apex Corporate Sustainability Award 2016 in the Sustainable Business Category for Large Organisations. The award by Global Compact Network Singapore recognises firms that lead in sustainability. We will continue to refine our policies and practices, and identify opportunities to enhance our reporting approach.

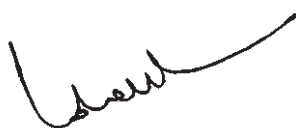
We invest in partnerships that enrich educational opportunities, preserve our environment, improve the well-being of the underprivileged and support economic vitality. To help preserve biodiversity in Singapore’s urban landscape, Keppel committed \$2.08 million to the establishment of the Keppel Discovery Wetlands. This freshwater forest wetland ecosystem is historically found in the vicinity of the Singapore Botanic Gardens, a UNESCO World Heritage Site. The restored 1.8 hectare wetlands was officially opened by the Prime Minister of Singapore on 31 March 2017, and provides opportunities for the public to experience and learn about a freshwater forest wetland habitat in the heart of the Singapore city centre.

Employee volunteerism complements and enriches our community investments. Keppel Volunteers, the Group’s volunteer movement, spearheads regular volunteer activities. In 2016, employees across the Group in Singapore achieved over 8,000 hours of community service, an increase of 3,000 hours over the 5,000 hours in 2015.

With an eye towards the future, we will continue to strive in collaborating with our stakeholders to contribute to the positive development of societies and in navigating this sustainability journey.

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**The UN Sustainable Development Goals defined global priorities for governments, businesses and civil society to create a sustainable future. As a Group committed to providing solutions for sustainable urbanisation, we work closely with our stakeholders in addressing these priorities.**

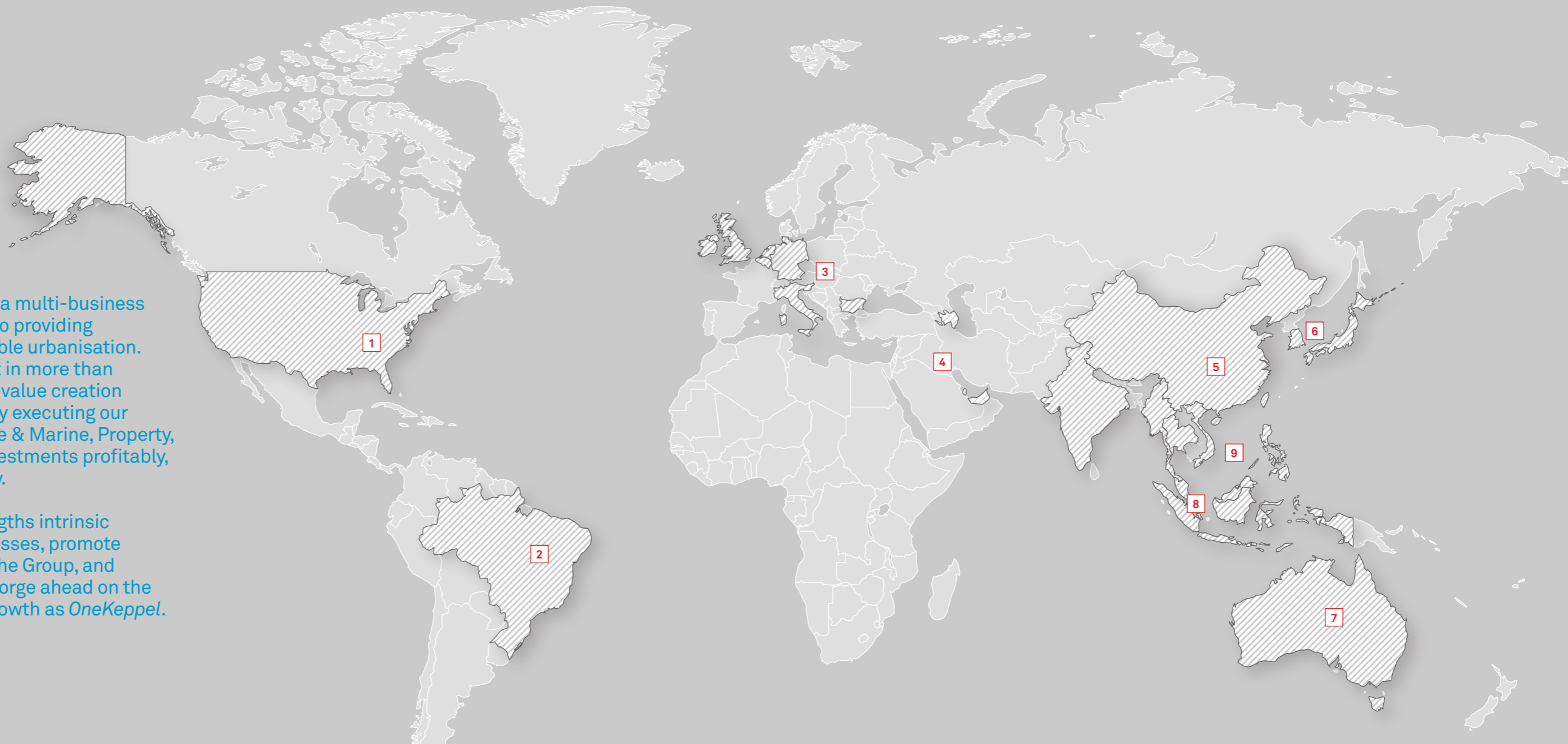


**Loh Chin Hua**  
**Chief Executive Officer**  
11 May 2017

## Our Global Presence

Keppel Corporation is a multi-business company committed to providing solutions for sustainable urbanisation. With a global footprint in more than 20 countries, we drive value creation for our stakeholders by executing our businesses in Offshore & Marine, Property, Infrastructure and Investments profitably, safely and responsibly.

We enhance the strengths intrinsic in our different businesses, promote collaboration across the Group, and harness synergies to forge ahead on the path of sustainable growth as *OneKeppel*.



<b>1. North America</b> United States ■ ■	<b>4. Middle East &amp; West Asia</b> Azerbaijan ■ Qatar ■ ■ United Arab Emirates ■	<b>7. Australia</b> ■ ■ ■
<b>2. South America</b> Brazil ■	<b>8. Singapore</b> ■ ■ ■ ■	<b>9. Rest of Asia</b> India ■ ■ Indonesia ■ ■ ■ Malaysia ■ ■ ■ ■ Myanmar ■ The Philippines ■ ■ ■ Vietnam ■ ■ ■ ■
<b>3. Europe</b> Belgium ■ Bulgaria ■ Italy ■ Ireland ■ The Netherlands ■ ■ ■ ■ Germany ■ The United Kingdom ■ ■ ■ ■	<b>5. China &amp; Hong Kong</b> ■ ■ ■ ■	<b>6. Japan &amp; South Korea</b> ■ ■

**Business Divisions:**  
 ■ Offshore & Marine  
 ■ Property  
 ■ Infrastructure  
 ■ Investments

### Offshore & Marine

Keppel Offshore & Marine is a global leader in offshore rig design, construction, repair and upgrading, ship conversions and repair, and specialised shipbuilding.

The company's *Near Market, Near Customer* strategy is supported by its international network of yards, offices and expertise.

It remains committed to investing prudently in Research and Development and developing new capabilities to seize market opportunities.

### Property

Keppel Land shapes urban landscapes in Asia as a choice developer with a sterling portfolio of award-winning residential developments, integrated townships and investment-grade commercial properties.

Reputed for its quality and innovation hallmark, the company is committed to create sustainable live-work-play environments of enduring value.

### Infrastructure

Keppel Infrastructure drives the Group's strategy to invest in, own and operate competitive energy infrastructure, and grows its integrated power and gas, environmental and energy efficiency businesses.

Keppel Telecommunications & Transportation is a leading provider of urban logistics solutions and owns, acquires, develops and manages state-of-the-art data centres.

### Investments

Keppel Capital is the Group's asset management arm. It has total assets under management of approximately \$25 billion in real estate, infrastructure and data centres.

The company strengthens the Group's capital recycling platform and expands its capital base with co-investors, thus allowing the Group to seize opportunities for growth.

# Group Structure

GRI 102-45

**KEPPEL CORPORATION LIMITED**

Offshore & Marine	Property	Infrastructure	Investments
<ul style="list-style-type: none"> <li>Offshore rig design, construction, repair and upgrading</li> <li>Ship conversion and repair</li> <li>Specialised shipbuilding</li> </ul>	<ul style="list-style-type: none"> <li>Property development</li> <li>Investments</li> </ul>	<ul style="list-style-type: none"> <li>Energy infrastructure</li> <li>Environmental infrastructure</li> <li>Infrastructure services</li> <li>Investments</li> <li>Logistics and data centres</li> </ul>	<ul style="list-style-type: none"> <li>Asset management</li> <li>Investments</li> </ul>
<p><b>KEPPEL OFFSHORE &amp; MARINE LTD</b> 100%</p>	<p><b>KEPPEL LAND LIMITED</b> 100%</p>	<p><b>KEPPEL INFRASTRUCTURE HOLDINGS PTE LTD</b> 100%</p>	<p><b>KEPPEL CAPITAL HOLDINGS PTE LTD</b> 100%</p>
<p>Keppel FELS Limited 100%</p> <p>Keppel Shipyard Limited 100%</p> <p>Keppel Singmarine Pte Ltd 100%</p> <p>Keppel LeTourneau 100%</p> <p>Keppel Nantong Shipyard Company Limited 100%</p> <p><i>China</i></p> <p>Offshore Technology Development Pte Ltd 100%</p> <p>Deepwater Technology Group Pte Ltd 100%</p> <p>Marine Technology Development Pte Ltd 100%</p> <p>Keppel AmFELS LLC 100%</p> <p><i>United States</i></p> <p>Keppel Verolme BV 100%</p> <p><i>The Netherlands</i></p> <p>Keppel FELS Brasil SA 100%</p> <p><i>Brasil</i></p> <p>Keppel Philippines Marine Inc 98%</p> <p><i>The Philippines</i></p> <p>Keppel Subic Shipyard Inc 86%</p> <p><i>The Philippines</i></p> <p>Caspian Shipyard Company Limited 51%</p> <p><i>Azerbaijan</i></p> <p>Arab Heavy Industries PJSC 33%</p> <p><i>United Arab Emirates</i></p> <p>Nakilat-Keppel Offshore &amp; Marine Ltd 20%</p> <p><i>Qatar</i></p> <p>Dyna-Mac Holdings Limited<sup>4</sup> 24%</p>	<p>Keppel Land International Limited 100%</p> <p><i>Southeast Asia and India</i></p> <p>Keppel Land China 100%</p> <p><i>China</i></p> <p>Keppel Bay Pte Ltd 100%</p> <p>Keppel REIT<sup>4</sup> 45%</p>	<p><b>ENERGY INFRASTRUCTURE</b></p> <p>Keppel Gas Pte Ltd 100%</p> <p>Keppel Electric Pte Ltd 100%</p> <p>Keppel DHCS Pte Ltd 100%</p> <p>Keppel Merlimau Cogen Pte Ltd<sup>5</sup> 49%</p> <p><b>ENVIRONMENTAL INFRASTRUCTURE</b></p> <p>Keppel Seghers Pte Ltd 100%</p> <p><b>INFRASTRUCTURE SERVICES</b></p> <p>Keppel Seghers Engineering Singapore Pte Ltd 100%</p> <p><b>INVESTMENTS</b></p> <p>Keppel Infrastructure Trust<sup>4</sup> 18%</p> <p><b>KEPPEL TELECOMMUNICATIONS &amp; TRANSPORTATION LTD<sup>4</sup></b> 80%</p> <p><b>LOGISTICS &amp; DATA CENTRES</b></p> <p>Keppel Logistics Pte Ltd 100%</p> <p>Keppel Data Centres Holding Pte Ltd 100%</p> <p>Keppel Logistics (Foshan) Pte Ltd 70%</p> <p><i>China</i></p> <p>Keppel DC REIT<sup>3 &amp; 4</sup> 35%</p>	<p>Keppel REIT Management Limited 100%</p> <p>Alpha Investment Partners Ltd 100%</p> <p>Keppel Infrastructure Fund Management Pte Ltd 100%</p> <p>Keppel DC REIT Management Pte Ltd<sup>5</sup> 50%</p> <p><b>K1 VENTURES LIMITED<sup>4</sup></b> 36%</p> <p><b>KRISENERGY LTD<sup>4</sup></b> 40%</p> <p><i>Cayman Islands</i></p> <p><b>M1 LIMITED<sup>2 &amp; 4</sup></b> 19%</p>
			<p><b>SINO-SINGAPORE TIANJIN ECO-CITY INVESTMENT AND DEVELOPMENT CO., LTD<sup>1</sup></b> 50%</p> <p><i>China</i></p>

**GROUP CORPORATE SERVICES**

Control & Accounts	Human Resources	Tax
Corporate Communications	Legal	Treasury
Strategy & Development	Risk & Compliance	Information Systems
Mergers & Acquisitions/Corporate Development	Audit	Health, Safety & Environment

Notes:

- Owned by a Singapore Consortium, which is in turn 90%-owned by the Keppel Group.
- Owned by Keppel Telecommunications & Transportation Ltd, an 80%-owned subsidiary of Keppel Corporation.
- Owned by Keppel Telecommunications & Transportation Ltd (30%) and Keppel Land Limited (5%).
- Public listed company.
- Owned by Keppel Infrastructure Holdings Pte Ltd (49%) and Keppel Infrastructure Trust (51%).
- Owned by Keppel Capital Holdings Pte Ltd (50%) and Keppel Telecommunications & Transportation Ltd (50%).

Updated as at 3 March 2017. The complete list of subsidiaries and significant associated companies is available at [www.keppcorp.com](http://www.keppcorp.com).

# Our Sustainability Strategy

Keppel places sustainability at the heart of our strategy and operations, so as to create sustainable value for all our stakeholders.

Our Vision, Mission, Core Values and Operating Principles define our purpose, strategy and values, and how we measure success.

Our Sustainability Framework articulates our commitment to deliver value to all our stakeholders through Sustaining Growth in our businesses, Empowering Lives of people and Nurturing Communities wherever we operate. The Framework is underpinned by:

(1) *Policies and guidelines*, including our Employee Code of Conduct, which establishes a clear tone at the top with regard to employees' business and ethical conduct, Anti-Bribery and Corruption Statement, Health, Safety and Environment Policy, Corporate Statement on Human Rights and Supplier Code of Conduct;

(2) *Management systems*, including ISO 9001 Quality Management System, ISO 14001 Environmental Management System and OHSAS 18001 Occupational Health & Safety Management System, which help us to align our practices with best-in-class international standards; and

(3) *Sustainability performance targets*, including Keppel's target to achieve a 16% improvement in carbon emissions from 2020 business-as-usual levels.

The Framework guides our investments in our host countries and local communities.

As part of the Keppel Group's vision and roadmap, we are committed to good corporate citizenry, and we aim to positively impact the communities in which we operate.

We engage deeply with our stakeholders and track external trends to determine issues most relevant for our company

and identify areas where we can make a lasting contribution to society.

Our sustainability strategy is guided by a variety of external sources, including the Global Reporting Initiative, Singapore Exchange Guide to Sustainability Reporting, United Nations (UN) Global Compact, UN Guiding Principles on Business and Human Rights, and UN Sustainable Development Goals.

## Sustainability Framework



### Sustaining Growth

Our commitment to business excellence is driven by our unwavering focus on strong corporate governance and prudent risk management.

Resource efficiency is our responsibility and makes good business sense.

Innovation and delivering quality products and services sharpen our competitive edge.



### Empowering Lives

People are the cornerstone of our businesses.

As an employer of choice, we are committed to grow and nurture our talent pool through continuous training and development to help our people reach their full potential.

We want to instil a culture of safety so that everyone who comes to work goes home safe.



### Nurturing Communities

As a global citizen, Keppel believes that as communities thrive, we thrive.

We engage and nurture communities wherever we are, with the aim of achieving a sustainable future together.

As leaders in our businesses, we support industry initiatives and encourage open dialogue to promote growth.



## Driving Sustainability

Winner



Won the Singapore Apex Corporate Sustainability Award 2016 in the Sustainable Business Category for Large Organisations.

Top 10



Listed among the top 10 constituents of all four Singapore Exchange Sustainability Indices.

35



Workplace Safety & Health Awards, the largest number won by a single organisation in Singapore.

Top 10



Listed among the top 10 constituents of the Singapore Governance and Transparency Index 2016.

\$7.3b



Of economic value generated for our stakeholders.

\$27m



In projected cost savings from our energy reduction initiatives in 2016 and Green Mark developments.

87%



Of our employees indicated that they would "go beyond the norm" to contribute to Keppel's success.

8,000



Hours of community work achieved in 2016 by our employees in Singapore, 3,000 more than in 2015.

\$5.21m



Invested in worthy social causes in 2016.

# Managing Sustainability

We drive our businesses to create positive impact and shared value for our stakeholders.

## Management Structure

Sustainability issues are managed and communicated at all levels of the Group.

The Keppel Corporation Board has oversight over the material environmental, social and governance (ESG) factors of the Company.

The Group Sustainability Steering Committee provides guidance on strategic and operational issues. The committee is chaired by Keppel Corporation's CEO and Executive Director Loh Chin Hua and comprises senior management from across the Group.

To ensure consistent development of the Group's strategy, high-level matters

pertaining to sustainability issues are addressed at the annual Group Sustainability Steering Committee meeting.

Supporting the Steering Committee is the Working Committee, chaired by Ho Tong Yen, General Manager of Group Corporate Communications, Keppel Corporation. The committee, comprising eight discipline-specific working groups with representatives from across our different businesses, executes and reports on the Group's efforts across the material ESG aspects of Economic Sustainability, Corporate Governance, Environmental Performance, Product Excellence, Safety & Health, Labour Practices & Human Rights, Supply Chain & Responsible Procurement, and Community Development.

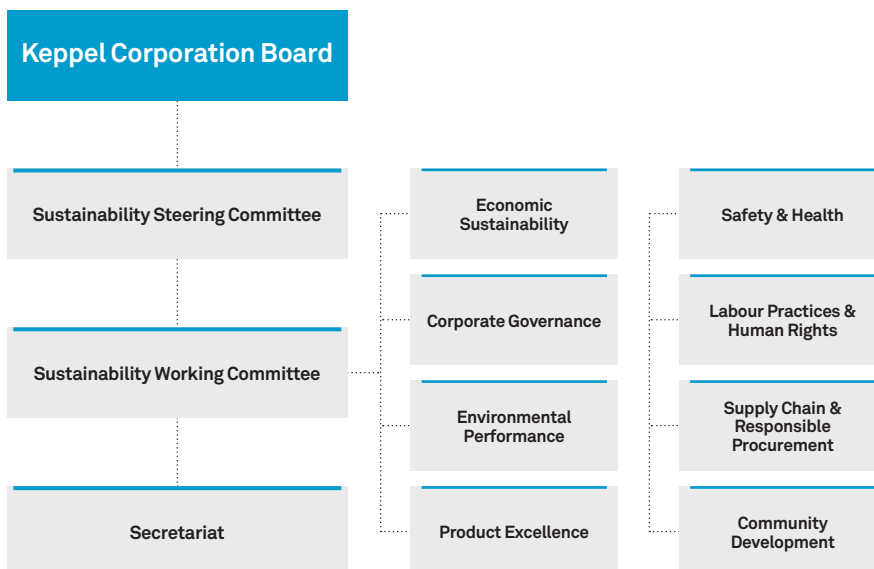
**Our material ESG factors receive Board oversight and are managed by the Group Sustainability Steering and Working Committees.**

## Board Statement on Sustainability

The key material environmental, social and governance factors for Keppel Corporation have been identified and are regularly reviewed by Keppel Corporation's Board of Directors and management. The Board oversees the management and monitoring of these factors and takes them into consideration in the determination of the Company's strategic direction and policies.

Keppel Corporation Board of Directors

## Keppel Group's Sustainability Management Structure



# Managing Sustainability

GRI 102-46

## The Keppel Core Values



**Can Do**  
Passion and Vigour



**Integrity**  
Act with Ethics and Honesty



**Customer Focus**  
Forge Value-Added Partnerships



**People-Centredness**  
Value and Nurture People



**Safety**  
Zero Accident, Zero Loss



**Agility & Innovation**  
Adapt to Change and Innovate for Growth



**Collective Strength**  
Global Mindset and Teamwork



**Accountability**  
Responsible to all Stakeholders

*Keppel Corporation received the Singapore Apex Corporate Sustainability Award 2016 in the Sustainable Business Category for Large Organisations, in recognition of the company's commitment to responsible business practice.*

The Steering and Working Committees are supported by the Secretariat, sited in Group Corporate Communications, which facilitates reporting. An independent third party is appointed to provide external assurance on the content of this report.

To enhance the data collection process and improve data integrity, the Working Committee uses a web-hosted integrated sustainability reporting platform.

The Group Regulatory Compliance Management Committee and Risk Executive Committee are chaired by Keppel Corporation's CEO Loh Chin Hua, while the Group Regulatory Compliance Working Team is chaired by Keppel Corporation's Chief Financial Officer Chan Hon Chew. The Group's Risk & Compliance Division and Group Risk & Compliance Committee are led by Keppel Corporation's General Manager of Group Risk & Compliance, Kevin Chng. The teams work with all business units and departments to identify, assess, mitigate and monitor significant risk and compliance matters across the Group.

The Board Safety Committee monitors the Health, Safety and Environment (HSE) performance of the Group and ensures that a robust HSE management system is maintained. HSE teams across the various business units play an active role in enhancing the safety culture within the Group and ensuring that our businesses comply with HSE legislation as well as Group HSE policies and standards.

R K Jaggi, Keppel Corporation's General Manager of Group HSE, leads the coordination of safety efforts across the Group.

The implementation of our Group-wide carbon management strategy is led by the Energy Efficiency Committee, which is chaired by Cindy Lim, Keppel Corporation's Director of Group Corporate Development. The committee sets targets, reviews effective implementation of carbon management efforts, and monitors and reports on performance. It comprises representatives from the respective business units, many of whom are certified energy managers.

Keppel Care Foundation coordinates philanthropic giving across the Group and is led by Robert Chong, Keppel Corporation's Director of Group Human Resources. The Foundation is governed by its own Board of Directors, and chaired by Lee Boon Yang, Chairman of Keppel Corporation.

### Materiality

Materiality assessments are important components of Keppel's sustainability strategy and reporting.

Our materiality assessments were based on the AA1000 AccountAbility Principles of Inclusivity and Materiality, as well as the Global Reporting Initiative (GRI) Principles for Defining Report Content – stakeholder inclusiveness, sustainability context, materiality and completeness.



Materiality with respect to sustainability reporting, as defined by GRI Standards, includes topics and indicators that reflect the organisation’s significant economic, environmental, and social impacts; and would substantively influence the assessments and decisions of stakeholders.

**Process**

A robust process was undertaken to identify and prioritise the Company’s material ESG issues.

The process, which took place from 2013 to 2015, was supported by an independent consultant and involved stakeholder consultations, workshops for senior management, an assessment of long-term global trends and an internal review of our businesses. The resulting Keppel Corporation Materiality Matrix illustrates the relative importance of the issues as seen by our stakeholders (see diagram).

In 2016, the material ESG issues for Keppel Corporation were reviewed at the annual Group Sustainability Working Committee meeting, where all eight working groups were present. The material ESG issues were further reviewed by the Steering Committee and Keppel Corporation’s Board of Directors and deemed to remain relevant.

**Report Boundary**

As a guide, this report covers global operations and all subsidiaries for which

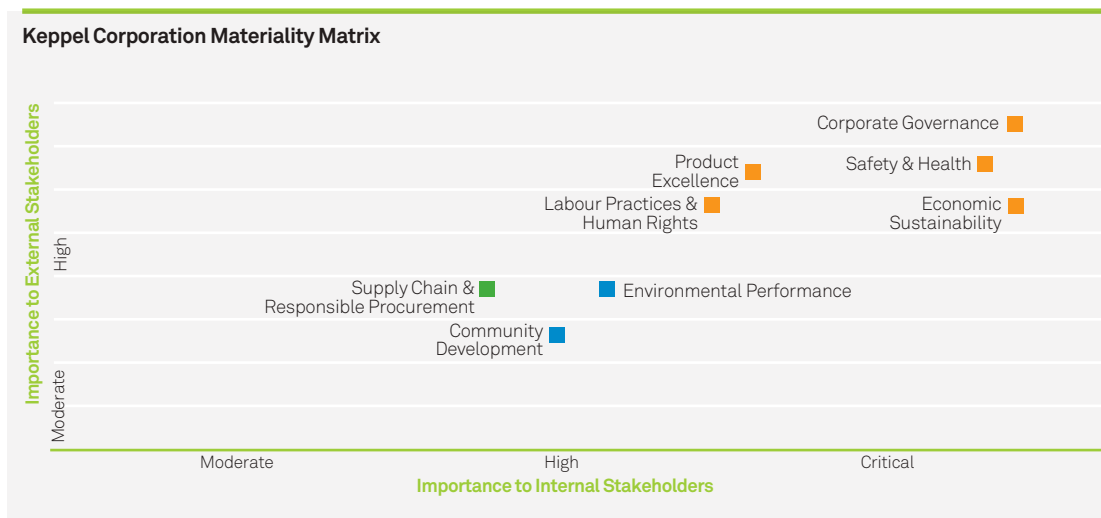
the Group has management control, unless otherwise indicated. The reporting boundary for financial data is the same as that of Keppel Corporation’s Report to Shareholders 2016. The reporting boundaries for Environmental Performance, Product Excellence, Safety & Health and Labour Practices & Human Rights differ, due to differences in where the impacts occur most for each topic. Business entities included within the boundaries contribute materially to overall Group performance.

The Company has 243 significant subsidiaries and associated companies as at 31 December 2016. Information pertaining to them is published on pages 173 to 181 of Keppel Corporation’s Report to Shareholders 2016.

In July 2016, we completed a significant restructuring exercise to consolidate our interests in the Group’s four asset management businesses, namely Keppel REIT Management, Alpha Investment Partners and Keppel Infrastructure Fund Management, as well as a 50% interest in Keppel DC REIT Management, under Keppel Capital. Keppel Capital will strengthen our capital recycling platform and provide a steady pillar of recurring income for the Group. It will also work closely with business units across the Keppel Group to expand our capital base with co-investors.

There are no restatements of information in this report.

**Our materiality assessments included stakeholder consultations, workshops for senior management and a review of long-term global trends.**



*The Keppel Corporation Materiality Matrix illustrates the degree of importance that internal and external stakeholders accord to the Company’s material issues.*

■ Aspects of critical importance   ■ Aspects of high importance   ■ Rating determined by internal stakeholder exercise only

# Management Systems

## Management Systems

### Offshore & Marine

#### Keppel FELS

ISO 9001 Quality Management System	Since 1994
Singapore Quality Class Certification	Since 2002
People Developer Singapore	Since 2003
Singapore Innovation Class Certification	Since 2004
International Sustainability Rating System 7th Edition Level 5; 8th Edition Level 7	Since 2008; 2015
SS 506 Singapore Standard for Occupational Safety & Health Management System	Since 2014

#### Keppel Shipyard

ISO 9001 Quality Management System	Since 1996
Singapore Quality Class Certification	Since 1999
ISO 14001 Environmental Management System	Since 2004
SS 506 Singapore Standard for Occupational Safety & Health Management System	Since 2010

#### Keppel Singmarine

ISO 9001 Quality Management System	Since 1997
OHSAS 18001 Occupational Health & Safety Management System	Since 2010
SS 506 Singapore Standard for Occupational Safety & Health Management System	Since 2010

#### Keppel AmFELS

ISO 9001 Quality Management System	Since 2015
ISO 14001 Environmental Management System	Since 2015
OHSAS 18001 Occupational Health & Safety Management System	Since 2015

#### BrasFELS

ISO 9001 Quality Management System	Since 2001
ISO 14001 Environmental Management System	Since 2006
OHSAS 18001 Occupational Health & Safety Management System	Since 2006

#### Nakilat-Keppel Offshore & Marine

ISO 14001 Environmental Management System	Since 2013
OHSAS 18001 Occupational Health & Safety Management System	Since 2013

#### Keppel Nantong Shipyard

OHSAS 18001 Occupational Health & Safety Management System	Since 2013
Work Safety Standardisation Certificate by State Administration of Work Safety	Since 2014

#### Keppel Batangas Shipyard

ISO 9001 Quality Management System	Since 2015
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#### Keppel Subic Shipyard

ISO 9001 Quality Management System	Since 2008
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#### Baku Shipyard

ISO 9001 Quality Management System	Since 2014
ISO 14001 Environmental Management System	Since 2016
OHSAS 18001 Occupational Health & Safety Management System	Since 2016

#### Caspian Shipyard Company

ISO 9001 Quality Management System	Since 2011
ISO 14001 Environmental Management System	Since 2011
OHSAS 18001 Occupational Health & Safety Management System	Since 2011

#### Arab Heavy Industries

OHSAS 18001 Occupational Health & Safety Management System	Since 2016
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### Property

#### Keppel Land Singapore

ISO 9001 Quality Management System	Since 2014
ISO 14001 Environmental Management System	Since 2008
OHSAS 18001 Occupational Health & Safety Management System	Since 2012

#### Keppel Land China

ISO 9001 Quality Management System	Since 2015
ISO 14001 Environmental Management System	Since 2009
OHSAS 18001 Occupational Health & Safety Management System	Since 2012

#### Keppel Land Indonesia

ISO 14001 Environmental Management System	Since 2013
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#### Keppel Land Vietnam

ISO 14001 Environmental Management System	Since 2009
OHSAS 18001 Occupational Health & Safety Management System	Since 2012

<b>Management Systems</b>	
<b>Infrastructure</b>	
<b>Keppel Infrastructure Holdings</b>	
ISO 9001 Quality Management System	Since 2015
ISO 14001 Environmental Management System	Since 2014
OHSAS 18001 Occupational Health & Safety Management System	Since 2014
<b>Keppel Infrastructure Services</b>	
ISO 9001 Quality Management System	Since 2015
ISO 14001 Environmental Management System	Since 2016
OHSAS 18001 Occupational Health & Safety Management System	Since 2016
<b>Keppel Seghers</b>	
ISO 9001 Quality Management System	Since 2015
ISO 14001 Environmental Management System	Since 2016
OHSAS 18001 Occupational Health & Safety Management System	Since 2016
<b>Keppel Seghers Engineering Singapore</b>	
ISO 14001 Environmental Management System	Since 2006
OHSAS 18001 Occupational Health & Safety Management System	Since 2007
<b>Domestic Solid Waste Management Centre</b>	
ISO 9001 Quality Management System	Since 2012
ISO 14001 Environmental Management System	Since 2012
OHSAS 18001 Occupational Health & Safety Management System	Since 2012
<b>Keppel Merlimau Cogen</b>	
ISO 9001 Quality Management System	Since 2015
ISO 14001 Environmental Management System	Since 2016
ISO 27001 Information Security Management System	Since 2014
OHSAS 18001 Occupational Health & Safety Management System	Since 2016
<b>Keppel Seghers Belgium N.V.</b>	
ISO 9001 Quality Management System	Since 2004
OHSAS 18001 Occupational Health & Safety Management System	Since 2011
<b>Keppel DHCS</b>	
ISO 9001 Quality Management System	Since 2005
ISO 14001 Environmental Management System	Since 2005
OHSAS 18001 Occupational Health & Safety Management System	Since 2005
<b>Keppel Logistics</b>	
ISO 9001 Quality Management System	Since 1993
ISO 13485 Quality Management System for Medical Devices	Since 2009
ISO 14001 Environmental Management System	Since 2002
OHSAS 18001 Occupational Health & Safety Management System	Since 2002
Secure Trade Partnership Certification	Since 2008
Good Distribution Practice for Medical Devices in Singapore	Since 2009
Trade Facilitation & Integrated Risk-based System – Enhanced Band	Since 2011
SS 590 Hazard Analysis and Critical Control Point-based Food Safety Management System	Since 2011
Health Sciences Authority – Good Distribution Practice Certificate	Since 2016
<b>Keppel Logistics (Foshan)</b>	
ISO 9001 Quality Management System	Since 2000
“A Class River Port” Certification by Guangzhou Customs	Since 2015
<b>Keppel Data Centres</b>	
SS 507 Singapore Standard for Information and Communications Technology Disaster Recovery Services for Keppel DC Singapore 2 (KDC SGP 2), Keppel DC Singapore 1 (KDC SGP 1) and Keppel DC Singapore 3 (KDC SGP 3)	Since 2009/ 2011/2015
Association of Banks in Singapore - Outsourced Service Provider’s Audit Report for KDC SGP 1 and KDC SGP 2	Since 2016
TIA-942 Tier III Telecommunications Infrastructure Standard for KDC SGP 2, KDC SGP 1 and KDC SGP 3	Since 2010/2013/2015
SS 564 Singapore Standard for National Green Data Centre Management System for KDC SGP 2, KDC SGP 1 and KDC SGP 3	Since 2011/2014/ 2015
Threat Vulnerability Risk Assessment by the Monetary Authority of Singapore for KDC SGP 1	Since 2012
SS 577 Water Efficiency Management System for KDC SGP 1 and KDC SGP 2	Since 2015/2016
ISO/IEC 9001 – Quality Management System for KDC SGP 1, KDC SGP 2 and KDC SGP 3	Since 2015
ISO/IEC 27001 – Information Security Management System for KDC SGP 1, KDC SGP 2 and KDC SGP 3	Since 2015/2016
ISO 50001 Energy Management System for KDC SGP 1, KDC SGP 2 and KDC SGP 3	Since 2015/2016
<b>Keppel Logistics (Hong Kong)</b>	
ISO 9001 Quality Management System	Since 2000
<b>Indo-Trans Keppel Logistics Vietnam</b>	
Food Safety Conditions for VSIP 1 DC/Ha Binh Phuong	Since 2015/2014
Sedex Members Ethical Trade Audit 4 – Pillar Certification	Since 2014

# Performance Overview

## Performance Data

	2014	2015	2016	Interpretation	Page No.
<b>Environment (Singapore Operations)</b>					
Direct Energy (GJ)	738,529	738,935	7,166,393 <sup>1</sup>	■	43
Indirect Energy (GJ)	1,625,457	1,592,299	1,595,838	■	43
Potable Water Used (m <sup>3</sup> )	1,386,505	1,371,690	1,445,304	■	45
NEWater Used (m <sup>3</sup> )	2,593,781	2,370,696	2,586,318	■	45
Recycled Waste (tonnes)	178,912	168,315	47,263	■	46
Incinerated Waste (tonnes)	40,524	33,556	27,929	■	46
Direct Carbon Emissions (t-CO <sub>2</sub> )	578,725	663,557	1,031,948 <sup>1</sup>	■	47
Indirect Carbon Emissions (t-CO <sub>2</sub> )	202,747	175,165	191,189	■	47
<b>Safety</b>					
Accident Frequency Rate (Global) (reportable accidents per million man-hours)	0.23	0.13	0.15	■	64
Accident Severity Rate (Global) (man-days lost per million man-hours)	108	115	254	■	64
Accident Frequency Rate (Singapore) (reportable accidents per million man-hours)	0.16	0.09	0.16	■	64
Accident Frequency Rate (Overseas) (reportable accidents per million man-hours)	0.32	0.19	0.15	■	64
Accident Severity Rate (Singapore) (man-days lost per million man-hours)	140	54	132	■	64
Accident Severity Rate (Overseas) (man-days lost per million man-hours)	67	187	411	■	64
<b>Labour</b>					
Training Hours per Employee (Singapore)	49	27.2	29.8	■	74
Training Hours per Employee (Global)	31	23.2	25.3	■	74
Group Employee Turnover Rate (%)	8.8	8.9	12.3	■	76
Local Hires (%)	62.7	60.0	59.4	■	74
Senior Management Hired Locally (%)	61.8	60.3	60.3	■	74
<b>Community</b>					
Philanthropic Investments (S\$million)	5.88	6.27	5.21	■	81

■ Generally Desirable   ■ Neutral   ■ Undesirable

<sup>1</sup> The significant increase in direct energy and direct carbon emissions was due to the expansion in our scope of reporting in 2016 to include data from City Gas, the sole producer and retailer of town gas in Singapore.

# Sustainable Development Goals

## We welcome the introduction of the United Nations' Sustainable Development Goals and believe that businesses play an important role in achieving these goals.

The 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development officially came into force on 1 January 2016. The SDGs were adopted earlier by world leaders in September 2015 at a historic United Nations (UN) Summit, and define global priorities and aspirations for 2030.

Keppel welcomes the introduction of the SDGs and believes that businesses can play an important role in the achievement of the goals by advancing sustainable development. We reviewed how our different businesses can contribute to each of the SDGs, and have, where appropriate, incorporated the goals as a supportive framework for our sustainability strategy. In this report, we share how we contribute towards eight of these goals through our business thrusts.

### Building Sustainable Cities



As a multi-business group, Keppel offers compelling solutions to meet the world's needs for sustainable urbanisation. Our different verticals provide solutions for energy, infrastructure, clean environments, high quality homes and offices, and connectivity. We aim to create long-term benefit for communities wherever we operate.

Energy use in buildings and for building construction represents more than one-third of global final energy consumption and contributes to nearly one-quarter of greenhouse gas (GHG) emissions worldwide<sup>1</sup>. A growing population means that energy demand in buildings could increase by 50% by 2050<sup>2</sup>. The building sector offers significant and cost-effective GHG mitigation potential<sup>3</sup>.

As one of Asia's premier property companies, Keppel Land is focused on developing properties that harmonise with the environment, and adopts a holistic and proactive approach towards environmental management.

The company undertakes rigorous measures to ensure that both new and existing developments not only comply with, but exceed regulatory requirements, and are aligned with internationally-recognised environmental guidelines. For all completed commercial buildings in Singapore, Keppel Land has achieved its goal of achieving at least the BCA Green Mark Gold<sup>PLUS</sup> standard. Keppel Land also aims for all its new developments overseas to attain at least the BCA Green Mark Gold certification or its equivalent. The company has garnered a total of 65 BCA Green Mark Awards to date.

Keppel Telecommunications & Transportation continues to focus on energy efficiency and reliability in its data centre portfolio. Since 2015, all of the data centre facilities owned or managed by Keppel Data Centres in Singapore have been certified with the Singapore Standard for Green Data Centres – Energy and Environmental Management System. In the Logistics business, the company continues to harness technology, such as enhanced route planning, to optimise resources.

Keppel Capital, Keppel's asset management arm, manages different asset classes, from energy and infrastructure to real estate. Keppel Capital seeks to conduct business responsibly, and this includes enhancing and improving the environmental performance of its property and infrastructure assets through the incorporation of green features where feasible.

The Keppel Group is also leading the Singapore Consortium in the development of the Sino-Singapore Tianjin Eco-City (Eco-City). This is a high-level project between the governments of Singapore and China to develop a sustainable city which can be a model for sustainable development in other Chinese cities. Now into its ninth year of development, the Eco-City has transformed from a barren, saline and alkaline site to an emerging green city, with over 70,000

residents. The Eco-City is developed in accordance with a comprehensive set of Key Performance Indicators that cover various aspects of sustainability, including environmentally friendly buildings, green transportation, use of renewable energy, as well as social and economic factors.

### Collaborating to Deliver Reliable Energy Solutions



Solutions in our energy portfolio focus on enhancing access to energy.

Keppel Offshore & Marine (Keppel O&M) is strengthening its track record in providing comprehensive and innovative solutions in Liquefied Natural Gas (LNG). LNG is considered to be one of the safest and cleanest fuels available, and offers significant potential for industries to reduce GHG emissions. For instance, Keppel O&M has established a joint venture with Shell to supply LNG bunkering operations services in Singapore's port, and has also signed a Memorandum of Understanding to jointly explore opportunities to cater to the demand for LNG as a fuel in coastal areas, inland waterways and the international marine sectors. In addition, Keppel Shipyard's design and technology arm, Gas Technology Development (GTD) leads the push for new technologies in all aspects of LNG development. GTD brings together research and development capabilities as well as marine conversion and shipbuilding expertise to develop a suite of robust gas solutions.

Since 2007, Keppel Merlimau Cogen Plant has been using natural gas to generate electricity. Gas-fired plants have significantly lower carbon emissions than oil-fired steam plants.

In 2016, Keppel Land's corporate office at Bugis Junction Towers became the first Green Mark-certified office to be fully powered by solar energy. The solar energy is purchased from Keppel Electric through an offsite solar purchase scheme.

<sup>1</sup> Global Status Report 2016, United Nations Environment Programme.

<sup>2</sup> Energy Technology Perspectives 2016, Organisation for Economic Co-operation and Development/International Energy Agency.

<sup>3</sup> Climate Change 2014: Mitigation of Climate Change, 5th Assessment Report, WG III, Intergovernmental Panel on Climate Change.



## Sustainable Development Goals

### Innovating Water & Waste Management Technology



Keppel Infrastructure leverages the advanced technology solutions of its subsidiary, Keppel Seghers, to address a wide spectrum of environmental issues in solid waste and wastewater. With a strong track record in Europe, North and South America, Asia Pacific, Africa and the Middle East, Keppel is well-positioned to meet the challenges of building a cleaner world.

Waste-to-energy (WTE) plants by Keppel generate green energy from

waste and help in landfill diversion by as much as 90% through reduction in the volume of waste disposed. We have implemented our proven and patented WTE technologies in more than 100 state-of-the-art facilities around the world. In 2016, Keppel Seghers secured six contracts to provide WTE technology and services in China, including that from repeat customer Shenzhen Energy Environment Engineering Co for the Baoan WTE plant, which is slated to become the world's largest WTE facility in terms of incineration capacity (see page 49).

Keppel's advanced water solutions cover the full water cycle, including

wastewater treatment, process and drinking water, desalination and water reuse. We have implemented more than 350 water and wastewater treatment projects globally to date. Keppel has designed, built and is now operating two landmark projects that serve the environmental needs of Qatar – the Doha North Sewage Treatment Works, which recycles wastewater and treats sludge for agricultural reuse, and the Domestic Solid Waste Management Centre, which treats municipal waste to generate green energy.

Separately, in January 2017, Keppel Infrastructure was awarded a contract by PUB, Singapore's national water agency, to Design, Build, Own and Operate the

country's fourth desalination plant. Upon completion in 2020, the plant will be the first in Singapore with the ability to treat sea water and fresh water.

### Valuing & Supporting Our People



Our businesses spark economic growth, productivity and jobs. In 2016, Keppel's businesses generated \$7.3 billion in economic value. This includes revenue, interest and investment income, and disposal gains. Close to \$1.2 billion was paid out in employee wages and benefits, and \$223 million was paid to governments in the form of income taxes.

More than 20,000 people in over 20 countries work at Keppel every day. They are supported by an inclusive culture that allows them to maximise their potential. Our hiring policies ensure equal employment opportunities for all (see pages 72 to 74).

We are committed to nurture human capital, and make investments to equip our employees with up-to-date skills and certifications. We also partner with government bodies and educational institutions on initiatives targeted at grooming young talents (see pages 74 to 77).



## Awards & Benchmarks

### Sustainability Benchmarks

#### Singapore Apex Corporate Sustainability Awards

Keppel Corporation received the Singapore Apex Corporate Sustainability Award 2016 in the Sustainable Business Category for Large Organisations. The awards were organised by Global Compact Network Singapore, the national society promoting corporate sustainability in Singapore, and represents the most prestigious form of recognition for companies in Singapore on corporate sustainability.



#### Dow Jones Sustainability Indices (DJSI)

Keppel Corporation was listed as an index component of the DJSI Asia Pacific Index for the fourth consecutive year. The index tracks the performance of the top 20% of the 600 largest Asia-Pacific companies in the S&P Global Broad Market Index that lead the field in terms of sustainability. The DJSI is the first global sustainability benchmark, and tracks the stock performance of the world's leading companies in terms of economic, environmental and social criteria. It is offered by RobecoSAM and S&P Dow Jones Indices.

MEMBER OF  
**Dow Jones  
Sustainability Indices**  
In Collaboration with RobecoSAM

#### MSCI Global Sustainability Index

Keppel Corporation was listed as a constituent of the MSCI Global Sustainability Index<sup>1</sup> for the third consecutive year. The index comprises companies with high environmental, social and governance (ESG) ratings relative to their regional sector peers. The benchmark targets the securities of companies with the highest ESG ratings representing 50% of the market capitalisation in each sector and region of the parent index.

MSCI  2017 Constituent  
MSCI Global  
Sustainability Indexes

#### Singapore Exchange (SGX) Sustainability Indices

Keppel Corporation was listed among the top 10 constituents of all four SGX Sustainability Indices – the flagship SGX Sustainability Leaders Index, SGX Sustainability Leaders Enhanced Index, SGX Sustainability Index and SGX Sustainability Enhanced Index.



The flagship SGX Sustainability Leaders Index comprises SGX-listed companies that are considered to be clear frontrunners in ESG standards when compared to their peers. Companies included in this benchmark meet minimum sustainability reporting requirements and are ranked above the 50th and 25th percentile in their Asia-Pacific peer group and global peer group respectively, based on assessments performed by SGX's research partner.

#### Euronext Vigeo World 120 Index

Keppel Corporation was listed as an index component of the Euronext Vigeo World 120 Index for the fourth consecutive year. Developed by Euronext, the primary exchange in the Eurozone, and Vigeo, the leading European agency in corporate social responsibility ratings, the Euronext Vigeo World 120 Index is composed of 120 of the highest-ranking listed companies globally in terms of performance in corporate responsibility.



<sup>1</sup> The inclusion of Keppel Corporation in any MSCI Index, and the use of MSCI logos, trademarks, service marks or index names herein, do not constitute a sponsorship, endorsement or promotion of Keppel Corporation by MSCI or any of its affiliates. The MSCI Indexes are the exclusive property of MSCI. MSCI and the MSCI Index names and logos are trademarks or service marks of MSCI or its affiliates.

## Corporate Citizenry

### Patron of the Arts Award

Keppel Corporation was conferred the Distinguished Patron of the Arts Award by Singapore's National Arts Council for the ninth consecutive year. The award recognises organisations which have contributed significantly towards the development of the arts.

### Community Chest Award

Keppel FELS was awarded the SHARE Platinum Award and the 10-Year Outstanding SHARE Award at the Community Chest Awards in 2016. Keppel Shipyard, Keppel Singmarine and Keppel Logistics were awarded the SHARE Platinum Award, SHARE Gold Award and the SHARE Bronze Award respectively. Keppel first started donating to SHARE, a monthly giving programme by Community Chest, in 1988.



Community Chest is the fund-raising and engagement arm of Singapore's National Council of Social Service. The awards acknowledge organisations who champion community giving to fund social service programmes for those in need.

## Corporate Governance & Transparency

### Singapore Corporate Awards

Keppel Corporation was awarded Bronze, Best Annual Report (for companies with \$1 billion and above in market capitalisation), at the Singapore Corporate Awards, jointly organised by the Institute of Singapore Chartered Accountants, Singapore Institute of Directors (SID) and The Business Times. The awards recognise exemplary corporate disclosure standards and corporate governance practices among listed companies in Singapore.

### Securities Investors Association of Singapore (SIAS) Investors' Choice Awards

Keppel Corporation was the winner of the Singapore Corporate Governance Award in the Diversity Category, and the Internal Audit Excellence Award at the SIAS Investors' Choice Awards. Keppel Corporation also clinched a Merit award in the Singapore Corporate Governance Award in the Big Cap category.

### Singapore Governance and Transparency Index (SGTI)

Keppel Corporation was ranked fifth in the SGTI 2016 as one of the best governed and most transparent listed companies in Singapore. The index is a joint initiative by CPA Australia, National University of Singapore Business School's Centre for Governance, Institutions and Organisations, and SID. The SGTI is the leading index for assessing corporate governance practices of Singapore-listed companies.

## Safety & Health

### Workplace Safety & Health (WSH) Awards

The Keppel Group clinched 35 WSH Awards conferred by Singapore's Ministry of Manpower and the WSH Council in 2016. This is the highest number of WSH awards won by a single organisation in 2016. The annual awards recognise organisations and individuals who have contributed to achieving excellence in workplace safety and health.



# Stakeholder Engagement

GRI 102-42

**We believe that driving meaningful dialogue with our stakeholders is crucial to our success as a company.**

Close collaboration with our stakeholders supports us in addressing sustainability challenges. We regularly engage with and consult our diverse groups of stakeholders. Where appropriate and relevant to our businesses, we incorporate their feedback into our planning and actions.

Our stakeholder engagement framework is developed in accordance with the AA1000 AccountAbility Stakeholder Engagement Standard, whereby stakeholders are defined to be individuals, groups of individuals or organisations that affect and/or could be affected by Keppel's activities, products or services and associated performance.

The feedback arising from our stakeholder engagements, which includes inputs on our sustainability reporting and materiality, has helped us strengthen the relevance of our reporting and approach to managing Keppel Corporation's material issues.

Stakeholder relations, including engagement with employees, customers, shareholders, governments and local communities, are managed by departments at the corporate level, as well as by functional divisions and volunteer committees across our business units worldwide.

Human Resources departments across the Group implement employee engagement initiatives, while Group Legal and Group Corporate Communications departments lead initiatives to engage shareholders and the investment community.

The commercial and procurement teams of our business units, as well as our Group Health, Safety and Environment (HSE) teams, coordinate efforts to engage our suppliers on compliance and HSE-related issues.

Keppel Volunteers, the Group's volunteer arm, engages non-profit organisations and organises regular community outreach activities to make a positive difference in the communities where we operate.

We communicate with our stakeholders through various platforms, including:

- Corporate website at [www.keppcorp.com](http://www.keppcorp.com)
- Senior executives' presentations at results announcements, analyst briefings, and investor roadshows
- Townhall meetings, dialogue and sharing sessions, as well as email communications to staff
- Publications such as Keppel Corporation's Report to Shareholders, Sustainability Report and corporate newsletters including Keppelite, 吉宝精典, OffshoreMarine and Across Borders

## Memberships in Associations

In addition to engaging our stakeholders, we participate as members of organisations that include:

- Global Compact Network Singapore to advance the United Nations Global Compact initiative and its 10 principles at the country level;
- Singapore Institute of Directors to promote the professional development of directors and corporate leaders and uphold the highest standards of corporate governance and ethical conduct;
- Singapore Institute of International Affairs to deepen understanding and forge stronger partnerships between countries in the region;
- Securities Investors Association (Singapore) to engage the investment community and promote good corporate governance;
- Singapore National Employers Federation to promote excellence in employment practices;
- Workplace Safety & Health (WSH) Council to build industry capabilities to better manage WSH and promote safety and health at work.

*Our stakeholder engagement process aims to build relationships and create mutual understanding. Viewing the scale model of the Saigon Centre mixed-use development were (from left): Ang Wee Gee, CEO of Keppel Land; Lee Boon Yang, Chairman of Keppel Corporation; H.E. Tran Vinh Tuyen, Vice Chairman of the People's Committee of Ho Chi Minh City; and Linson Lim, President (Vietnam) of Keppel Land.*



## Our Stakeholders

GRI 102-40 / 102-43 / 102-44

### Employees

We remain committed to attracting top talent and investing in the development of our people. We adopt merit-based recruitment practices and emphasise diversity and inclusiveness.

The results from our employee engagement surveys inform our employee engagement efforts and help us build a motivated workforce.

#### Key topics

Vision, strategy and direction; innovation; productivity; collaboration; people development.

#### Approach

Employee engagement surveys; town halls; trainings; mentorship programmes.



### Customers

Customer satisfaction is crucial to the success of our businesses. Our customers trust us to provide value-added, reliable and customised solutions.

We are committed to continually improve our range of products to better meet customers' needs, leveraging insights from our customer satisfaction surveys and client meetings.

#### Key topics

Product and service quality; HSE excellence.

#### Approach

Meetings; feedback channels such as email communications, phone calls and teleconferences; customer satisfaction surveys.



### Governments

Governments shape the business environments in which we operate. Political factors, policies and regulation can affect how businesses are run and also create new opportunities for companies.

We track topics of concern to governments and regulatory bodies to ensure that our businesses are equipped to meet government requirements wherever we operate.

#### Key topics

Opportunities for business collaboration and investment; sharing of industry best practice.

#### Approach

Official visits and meetings; industry networking functions.



### Shareholders

Shareholders play an important role in the financing, governance and control aspects of our business.

Our Investor Relations Policy sets out the principles that the Company abides by to provide shareholders and prospective investors with information to make well-informed decisions and ensure a level playing field.

#### Key topics

Business strategy and direction; economic performance.

#### Approach

Conference calls; shareholder meetings; facility visits; 'live' results webcasts; email communications.



### Suppliers

Strong, effective relationships with our suppliers give our businesses strategic advantages, including improved planning and product development, access to resources, greater supplier support and value, and lower costs.

Through leading by example, and by effecting stringent procurement processes and a Supplier Code of Conduct, we aim to positively influence the environmental, social and governance performance of our suppliers.

#### Key topics

Compliance; HSE excellence.

#### Approach

Regular meetings with key subcontractors and suppliers; site visits by management.



### Local Communities

As an active member of the communities in which we operate, it is our corporate responsibility to contribute towards their continued well-being.

We engage with community leaders and non-profit organisations, and conduct community needs assessments so as to develop sustainable and impactful programmes that drive community development.

#### Key topics

Community investments, volunteer programmes.

#### Approach

Meetings; donations; community outreach initiatives.



## Managing Our Supply Chain

**We work closely with stakeholders in our supply chain to positively influence their performance.**

### Our Supply Chain

The Keppel Group contracts local and foreign suppliers for our different lines of businesses, and we work closely with our suppliers to make a positive impact on their sustainability performance.

At our Offshore & Marine business, our subcontractors work jointly with us to construct, convert and repair offshore and marine vessels in our yards. Equipment manufacturers supply us with large-scale equipment such as offshore drilling equipment, thrusters and winches for installation on the rigs and offshore service vessels that we build for clients. In addition, we also procure cranes and panel line systems, as well as process equipment such as generators, cryogenic systems, switchgears and variable control systems. We also work with bulk material suppliers dealing in fuel, which includes petrol, diesel, furnace oil and Liquefied Petroleum Gas, as well as steel plates, steel profiles, cables, piping, grit and paint.

Our Property business engages consultants, contractors, and interior design firms to provide architectural and engineering design, construction and interior design services for our real estate developments.

As a manager of real estate properties, we also employ facility management companies to service our commercial buildings.

Our Infrastructure business engages subcontractors to provide Engineering, Procurement and Construction services in the construction of our plants and data centres. We also purchase raw materials, such as feedstock, to power the co-generation plant for our Gas-to-Power business. In addition, we procure goods and services for the operations and maintenance of our plants.

In our Logistics business, subcontractors are engaged for transportation services, warehouse operations and facility maintenance. In our Data Centres business, external facility technicians are engaged for equipment maintenance regularly.

In our Investment business, our managers engage subcontractors to ensure smooth operations and maintenance of our assets. The supply chain for this business also comprises mechanical and electrical equipment suppliers for some of our data centres, as well as facility management companies that provide physical security, technical maintenance and routine cleaning services.

### Management

We adhere to local content requirements and are committed towards strengthening our base of local suppliers in countries where we operate. In doing so, we support domestic economic growth, generate employment opportunities and improve the capacities of the workforces in our host countries.

We established the Supplier Code of Conduct at the end of 2016 to integrate Keppel's sustainability principles across our supply chain as well as to positively influence the environmental, social and governance performance of our suppliers. Suppliers of the Keppel Group of companies are expected to abide by the Code, which covers areas pertaining to business conduct, labour practices, safety and health, and environmental management.

In addition, third-party associates of the Group that provide services or engage in business activities on behalf of a Group company are required to abide by Keppel's Rules of Business Conduct. The rules specify the Group's policy with regard to ethical conduct and compliance with laws, anti-corruption, gifts and hospitality, and donations and contributions.



*We work closely with our suppliers to make a positive impact on their sustainability performance.*

As a large, global company with businesses in more than 20 countries, we value a secure, efficient and flexible supply chain.

In general, in qualifying new key suppliers before awarding them any business, we ensure that new suppliers have security practices in place that meet or exceed established requirements. We also focus on maintaining flexibility in our supply chains so as to ensure sufficient resources and effective capabilities.

New suppliers are screened and qualified in accordance with our requisition and purchasing policies.

We review potential suppliers' industry reputation, track records, Health, Safety and Environment (HSE) and labour criteria as well as certifications in key sustainability areas. For example, contractors with certifications for ISO 9001 Quality Management System, ISO 14001 Environmental Management System and OHSAS 18001 Occupational Health & Safety Management System or equivalent certifications are preferred.

Upon selection, new suppliers are assessed again by the respective work teams based on specified criteria. All subcontractors are required to abide by the relevant laws and regulations during the course of engagement. The feedback provided by the work teams to the procurement teams helps to determine whether new suppliers are included in our approved supplier list. Annual reviews of suppliers are also conducted to evaluate

suppliers' performance to ensure satisfactory service quality and HSE standards.

We also actively influence our supply chain by working closely with our subcontractors to ensure that they are aligned with our HSE standards.

As a participant of the Marine Sponsorship Scheme by Singapore's Ministry of Manpower (MOM), Keppel Offshore & Marine is obliged to ensure that its appointed resident contractors adhere to MOM guidelines for the employment of both local and foreign employees.

Keppel Land has in place a five-step supply chain management process that covers the whole life-cycle of its project from its initiation and design development stages to subsequent construction and operation stages. For all project sites covered under the scope of Keppel Land's environmental management system, contractors are required to conduct an impact assessment based on activities at the project site prior to construction. The assessment covers potential negative environmental impacts, including depletion of resources, biodiversity disturbance as well as air, water and noise pollution. Contractors are required to establish and implement appropriate measures to mitigate and/or prevent significant environmental impacts identified.

**Our Supplier Code of Conduct aims to integrate our sustainability principles across our supply chain and positively influence the environmental, social and governance performance of our suppliers.**



*Suppliers are expected to abide by the Supplier Code of Conduct, which covers areas pertaining to business conduct, labour practices, safety and health, and environmental management.*

# Economic Sustainability

## Major Developments in 2016

### Offshore & Marine

Delivered 21 major projects safely, on time and on budget.

Completed the acquisition of the LETOURNEAU™ jackup rig design, rig kit business, as well as aftersales and aftermarket service offerings.

Joint venture with Shell won the licence to supply Liquefied Natural Gas bunker to vessels in the Port of Singapore.

Secured an order to build three Trailing Suction Hopper Dredgers worth about \$100 million from Jan De Nul Group.

### Property

Sold about 5,720 homes in Asia, mostly in China and Vietnam, about 25% more than the total number of units sold in 2015.

Divested about \$680 million worth of assets including an office building in Sydney, a retail mall in Shanghai, two townships in Chengdu and Wuxi, and a hotel in Mandalay.

Invested about \$460 million to strengthen portfolios across markets including China, Vietnam, Indonesia, and Myanmar.

### Infrastructure

Commenced the 10-year operations and maintenance phase for the solids stream and sludge treatment facilities at the Doha North Sewage Treatment Works.

Secured six waste-to-energy (WTE) technology and services contracts.

Named preferred bidder for Singapore's fourth desalination plant.

Divested 90% of Keppel DC Singapore 3 to Keppel DC REIT.

Acquired a stake in e-commerce fulfilment company, Courex.

### Investments

Completed the restructuring of the Group's asset management businesses under Keppel Capital.

Achieved first closings of two new private equity funds, Alpha Data Centre Fund and Alpha Asia Macro Trends Fund III.

Keppel REIT divested 77 King Street in Sydney, Australia.

Keppel DC REIT added three data centres in Italy, the UK and Singapore to its portfolio.

Keppel Infrastructure Trust completed the capacity upgrade for Senoko WTE Plant on budget and ahead of schedule.



The formation of Keppel Capital will grow the Group's asset management platform by creating real assets in infrastructure and real estate.



#### Total Assets

# \$29.2b

Value of the Keppel Group's total assets as at end -2016.

#### Net Profit

# \$784m

Net profit in FY 2016.

## Against a challenging backdrop, Keppel Corporation performed creditably, demonstrating that with strong financial discipline, the Company can capture sustainable returns for its stakeholders.

### Overview

An estimated 54.5% of the world's population lived in urban settlements in 2016. According to estimates by the United Nations, urban areas are projected to house 60% of people globally by 2030, and one in every three people will live in cities with at least half a million inhabitants<sup>1</sup>.

Managing urban areas has become one of the most important development challenges of the 21st century. If well managed, cities offer important opportunities for economic development and for expanding access to basic services, including healthcare and education, for large numbers of people. Providing public transportation, as well as housing, electricity, water and sanitation for a densely settled urban population is typically cheaper and less environmentally damaging than providing a similar level of services to a dispersed rural population.

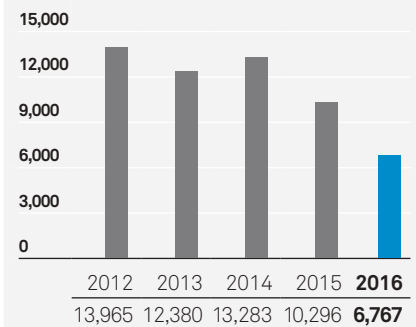
The rapid pace of urbanisation generates significant pressure on infrastructure and the delivery of services, potentially overwhelms housing and transport systems, and increases issues around urban pollution. Addressing sustainable development challenges is therefore an ever more urgent priority.

### Management Approach

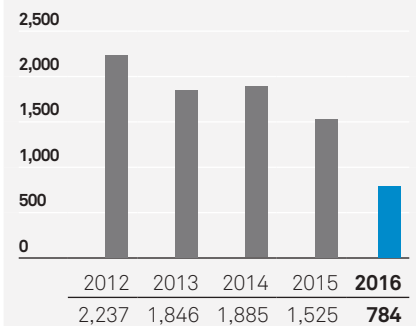
Keppel has a distinct blend of competencies to provide solutions for sustainable urbanisation. The Group is actively seeking opportunities for growth in this area, through meeting the growing demand for energy, high quality homes and offices, clean urban environments, good infrastructure and connectivity.

We aim to be a global best-in-class company at the forefront of our chosen industries. Over the year, we have made several strategic moves to grow Keppel sustainably. We have simplified our corporate structure and sharpened our business model. We are working our capital harder to seek the best possible returns, fostering innovation and collaboration, and harnessing synergies across the Group's businesses.

### Revenue (\$ m)



### Net Profit (\$ m)



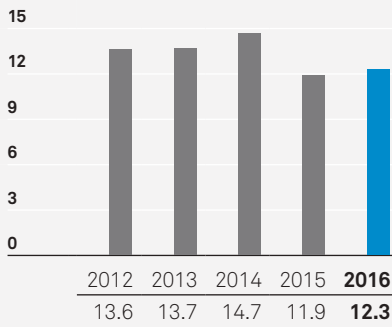
The full ownership of Keppel Land, following the completion of its Selective Capital Reduction exercise, has strengthened our ability to capture opportunities, recycle capital and allocate resources across the Group for optimal returns.

In July 2016, we completed a significant restructuring exercise to consolidate our interests in the Group's asset management businesses under Keppel Capital. This includes 100% interests in Keppel REIT Management, Alpha Investment Partners and Keppel Infrastructure Fund Management, as well as a 50% interest in Keppel DC REIT Management.

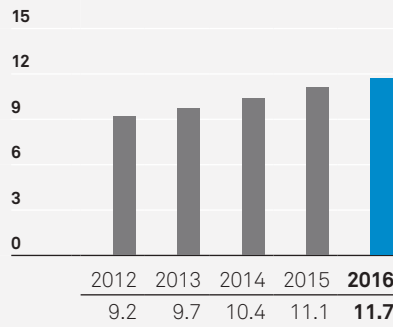
<sup>1</sup> United Nations, Department of Economic and Social Affairs, Population Division (2016), The World's Cities in 2016.

## Economic Sustainability

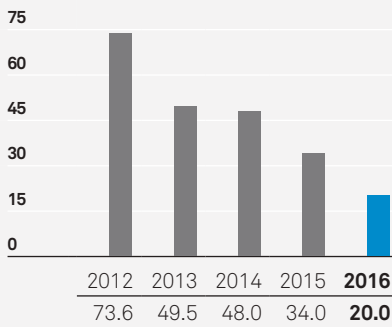
### Total Equity (\$ b)



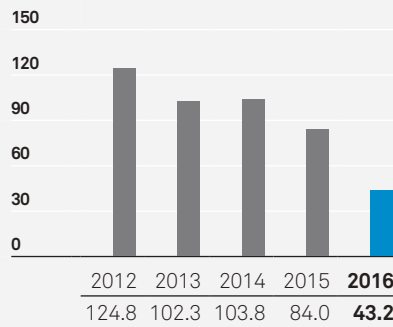
### Shareholders' Funds (\$ b)



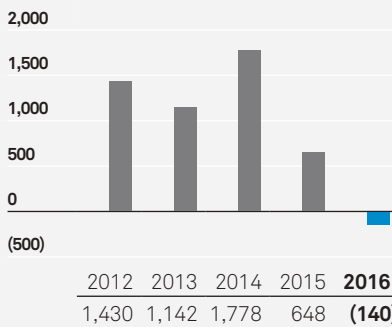
### Total Distribution Per Share (cents)



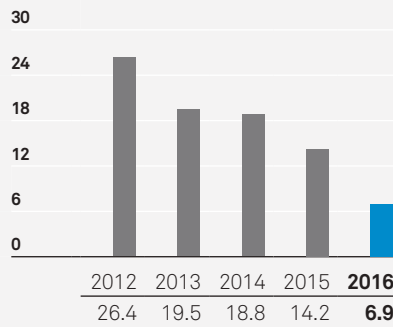
### Earnings Per Share (cents)



### Economic Value Added (\$ m)



### Return On Equity (%)



The creation of Keppel Capital is a significant component in our business model. With total assets under management of \$25 billion, Keppel Capital will strengthen our capital recycling platform and provide a steady pillar of recurring income for the Group. It will also work closely with the Group's other business units to expand our capital base with co-investors, thus allowing us to seize opportunities for growth without putting a strain on our balance sheet.

Another product of collaboration, the newly-launched Alpha Data Centre Fund, demonstrates how we can harness strengths among different business units. Alpha manages the fund and works with Keppel Telecommunications & Transportation (Keppel T&T) to create or acquire assets. Meanwhile, Keppel Data Centres Holding, a 70-30 joint venture between Keppel T&T and Keppel Land, will develop and project-manage the data centres in the fund, as well as serve as the facility manager.

#### Financial Performance in 2016

Group net profit was \$784 million for 2016, down 49% from \$1,525 million for 2015. This was due largely to lower contributions from the Offshore & Marine business, additional provisions for impairment of \$336 million, mainly arising from the rightsizing of Keppel Offshore & Marine and impairments of investments and stocks & work-in-progress.

Earnings Per Share was 43.2 cents for 2016, down 49% from 84.0 cents for 2015. Return on Equity was 6.9%, compared to 14.2% in the previous year. Economic Value Added was negative \$140 million for 2016, compared to \$648 million for 2015.

In 2016, cash inflow was \$576 million, compared to cash outflow of \$694 million in the previous year. Meanwhile, net gearing for 2016 was 0.56 times.

Total cash dividend for 2016 is 20.0 cents per share. This comprises a final cash dividend of 12.0 cents per share and the interim cash dividend of 8.0 cents per share distributed in the third quarter of 2016.

#### Government Assistance & Taxes Paid

In 2016, the Group received a total of \$6.1 million in financial assistance from governments. This largely consisted of Research and Development grants as well as a cash grant by the Singapore government's Jobs Credit scheme.

The Group operates in over 20 countries and paid a total of \$223 million in taxes to the various countries and tax jurisdictions in which it operates.

### Employee Compensation

The Group makes contributions to pension schemes as defined by the laws of the countries in which it has operations. In particular, the Singapore companies make contributions to the Central Provident Fund (CPF) in Singapore, a defined contribution pension scheme. In 2016, the company's contribution to CPF was \$80.7 million.

In 2016, staff costs amounted to \$1,155 million<sup>2</sup> in the form of wages and salaries, employer's contribution to Singapore's CPF, share options and share plans as well as other staff benefits. The Group's average number of employees in 2016 was 28,879<sup>3</sup>.

For more details on the Group's financial performance, please refer to pages 34 to

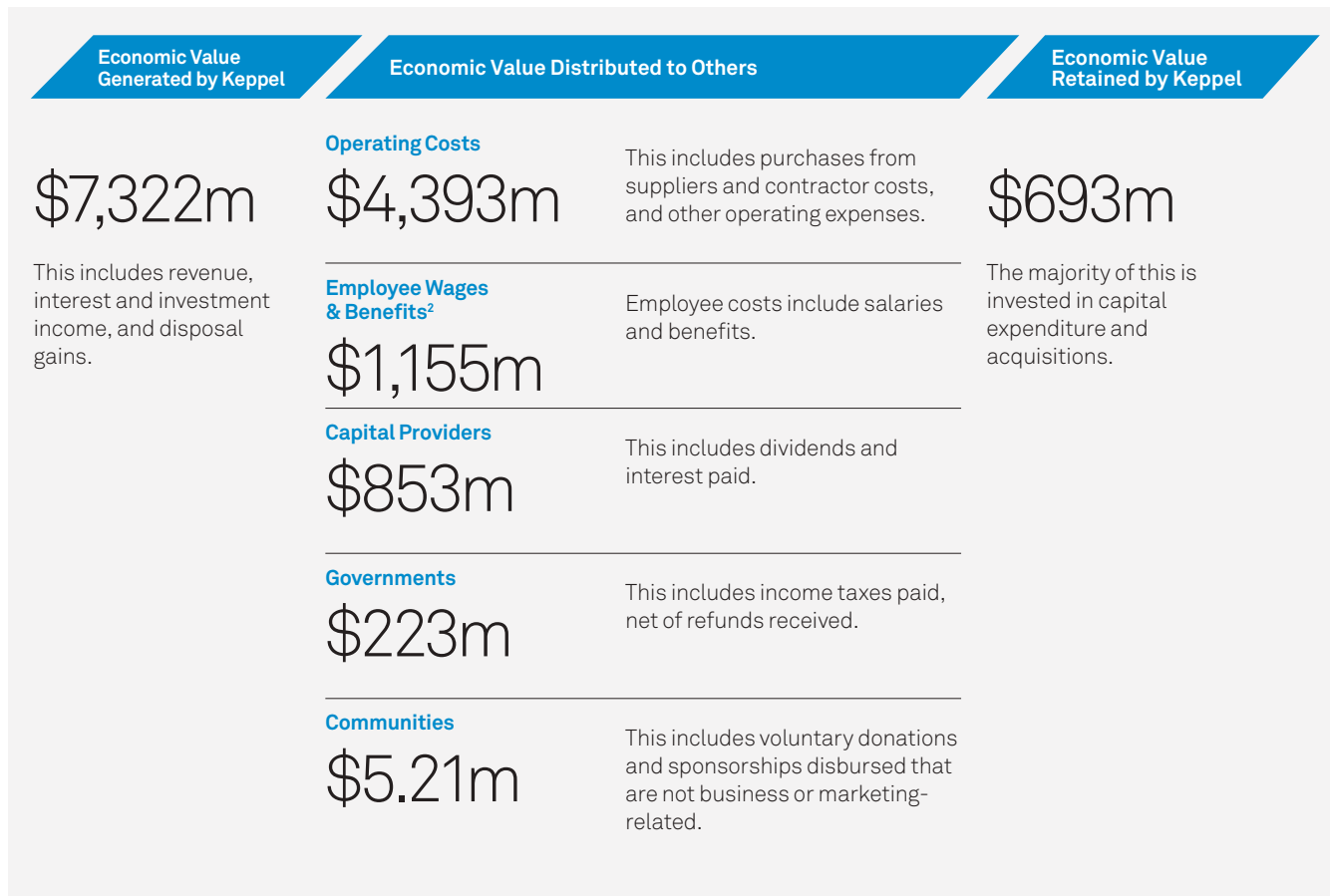
60 of Keppel Corporation's Report to Shareholders 2016.

### Economic Value Delivered to Society

Keppel's business operations generate employment, opportunities for suppliers and tax revenues for governments. Committed to positively impact the communities in which we operate, we contribute to worthy social causes through donations and sponsorships.

In 2016, Keppel generated \$7,322 million of economic value for our stakeholders, which was distributed through our business operations to suppliers, contractors, subcontractors, employees, investors, governments and community organisations, among others.

The majority of the economic value retained by Keppel after this distribution is invested in capital expenditure and acquisitions, as we maintain our competitive edge and stand ready to seize growth opportunities.



<sup>2</sup> Excludes capitalised staff costs in stocks and work-in-progress and capital expenditure.

<sup>3</sup> The figures in this section do not take into account the headcount and staff costs of associated companies, whereby an associated company is an entity, not being a subsidiary, over which the Keppel Group has significant influence, but not control.

# Corporate Governance

## Performance Overview

### What we said in 2016

Continue to guide business units on the enhanced Code of Conduct.

Continue to strengthen the adequacy and effectiveness of Keppel's risk management system.

Continue to enhance operational resilience through ongoing business continuity tests.

Develop continual training and education programmes to support the regulatory compliance programme and foster a compliance-centric culture.

### What we did in 2016

Conducted training seminars for business units on the enhanced Code of Conduct and key regulatory compliance policies and principles.

Established Supplier Code of Conduct and Group Gifts & Hospitality Policy.

Conducted business continuity tests, and identified and addressed gaps.

Conducted e-training and declaration of key Group policies.

Formally established the Group Regulatory Compliance Management Committee (RCMC) and Group Regulatory Compliance Working Committee (RCWC).

Established the Group Risk Executive Committee.

### What we plan to do

Continue to strengthen the adequacy and effectiveness of Keppel's risk management system.

Conduct Group-wide risk and compliance survey to gauge the level of staff engagement and understanding.

Continue to focus on the execution and delivery of our regulatory compliance roadmap, working towards reinforcing a full compliance culture.



Attesting to our commitment to good corporate governance, the Keppel Group received a total of five accolades at the 17th Investors' Choice Awards organised by the Securities Investors Association (Singapore).

Independent Directors

7 out of 9

Directors are independent.

Internal Controls

3

Lines of Defence under Keppel's System of Management Control.

Board Committees

5

Board Committees, with independent chairmen.

Our core value of integrity is driven at the highest level through strong corporate governance and proactive engagement with stakeholders.

Overview

The Board and management of Keppel Corporation Limited ("KCL", "Keppel" or the "Company") firmly believe that a genuine commitment to good corporate governance is essential to the sustainability of the Company's business and performance.

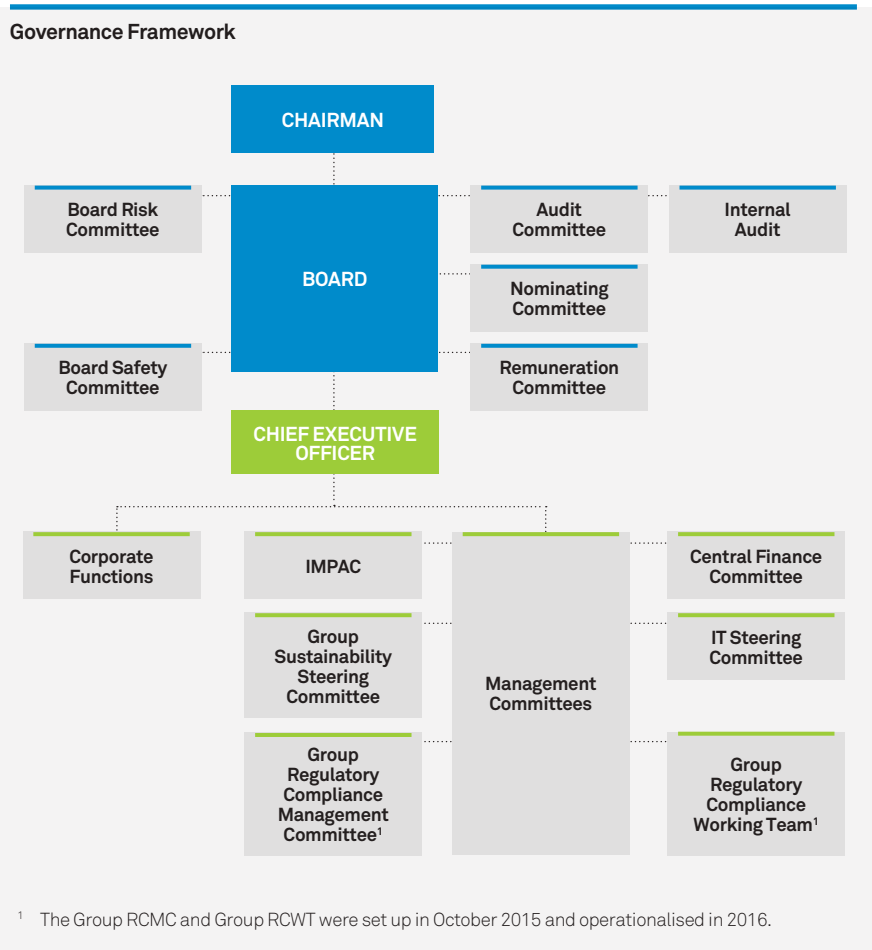
Keppel adheres to the principles and guidelines of the Code of Corporate Governance 2012 issued by the Monetary Authority of Singapore (the "2012 Code") and is focused on upholding high standards of corporate governance with a strong and independent board, demonstrating its commitment to good business ethics and maintaining clear, consistent and regular communication with shareholders.

Board Conduct of Affairs Governance Framework

Keppel's governance structure is as follows:

Lee Boon Yang is the non-executive and independent Chairman of the Company. Loh Chin Hua is the Chief Executive Officer (CEO) of the Company.

The Chairman, with the assistance of the Company Secretaries, schedules meetings and prepares meeting agenda to enable the Board to perform its duties responsibly having regard to the flow of the Company's operations. He sets guidelines on and monitors the flow of information from management to the Board to ensure that all material information is provided in a timely manner to the Board for the Board to make good decisions. He also encourages constructive relations



## Corporate Governance

between the Board and management, and between the executive and non-executive directors. At annual general meetings and other shareholders' meetings, the Chairman ensures constructive dialogue between shareholders, the Board and management. The Chairman takes a leading role in the Company's drive to achieve and maintain a high standard of corporate governance with the full support of the directors, Company Secretaries and management.

To assist the Board in the discharge of its oversight function, various board committees, namely the Audit, Board Risk, Nominating, Remuneration, and Board Safety Committees, have been constituted with clear written terms of reference. All board committees are actively engaged and play an important role in ensuring good corporate governance in the Company and within the Group.

The CEO, assisted by the management team, makes strategic proposals to the Board and after robust and constructive board discussion, executes the agreed strategy, manages and develops the Group's businesses and implements the Board's decisions. He is supported by management committees that direct and guide management on operational policies and activities, which include:

- (1) *Investments & Major Projects Action Committee (IMPAC)*, which evaluates, guides and optimises proposed Group investments and divestments exceeding prescribed value thresholds;
- (2) *Management Development Committee*, which nominates candidates as nominee directors to the boards of each unlisted company or entity that the Company is invested in ("Investee Company") so as to safeguard the Company's investment. In respect of Investee Companies that are (a) listed on a stock exchange, (b) managers or trustee-managers of any collective investment schemes, business trusts or any other trusts which are listed on a stock exchange, or (c) parent companies of the Company's core businesses, the Committee will recommend the candidates for the approval of the Nominating Committee ("NC");

- (3) *Central Finance Committee*, which reviews, guides and monitors financial policies and activities of Group companies;
- (4) *Enterprise Risk Management Committee*, which drives and coordinates the Group's risk management efforts, and implements the Enterprise Risk Management framework and processes;
- (5) *Group RCMC*, which articulates the Group's commitment to regulatory compliance, directs and supports the development of overarching compliance policies and guidelines, and facilitates the implementation and sharing of policies and procedures across the Group<sup>1</sup>;
- (6) *Group RCWT*, which supports the Group RCMC and oversees the development and review of overarching compliance policies and guidelines for the Group, as well as reviewing training and communication programmes<sup>1</sup>;
- (7) *Keppel IT Steering Committee*, which provides strategic information technology (IT) leadership and ensures IT strategy alignment in achieving business strategies; and
- (8) *Group Sustainability Steering Committee*, which sets the sustainability strategy and leads performance in key focus areas.

### Board Strategic Review

The Board periodically reviews and approves the Group's strategic plans. In the financial year ended 31 December 2014 ("FY 2014"), the Board approved the Group's Vision 2020<sup>2</sup> which sets out the vision, operating principles and values of the Group, and the roadmap<sup>3</sup> to take the Group's businesses into 2020 to achieve faster growth, build a stronger Keppel that fully captures the significant synergies within and among its Group companies, and fully develop the potential of its people.

### Review Process

A process is in place to support the Board in reviewing and monitoring the Group's strategic plans, including providing directors with the necessary context and opportunity to undertake effective and robust deliberation and debate. In this regard, a two-day off-site board strategy meeting is organised annually for in-depth

discussion on strategic issues and direction of the Group. This is followed by an update of each business unit's strategic plans for alignment with the Group's strategy. To support the Board's oversight of the implementation of the strategic plans, one business unit is invited to each quarterly Board meeting to present on its plans and current challenges and provide the Board an opportunity to perform an in-depth review into each of the Group's core businesses.

### Independence of Directors

There is a strong and independent element on our Board, with an independent chairman and majority of our Board comprising independent directors. Except for the Board Safety Committee, all board committees are comprised entirely of independent or non-executive directors, with independent chairmen.

The independence of the directors is reviewed by the NC on an annual basis, bearing in mind the 2012 Code's definition of an "independent director" and guidance as to relationships the existence of which would deem a director not to be independent. Such reviews are based on each director's self-declaration in the Director's Independence Checklist and his/her actual performance on the Board and board committees.

### Independent Judgment

All directors are expected to exercise independent judgment in the best interests of the Company. This is one of the performance criteria for the peer and self-assessment on the effectiveness of the individual directors. Based on the results of the peer and self-assessment carried out by the directors for FY 2016, all directors have discharged this duty consistently well.

### Conflict of Interest

Every director is required to declare any conflict of interest in a transaction or proposed transaction with the Company as soon as is practicable after the relevant facts have come to his/her knowledge. On an annual basis, each director is also required to submit details of his/her associates for the purpose of monitoring interested persons transactions.

<sup>2</sup> With effect from FY2014, the vision of the Company is to be a global company at the forefront of its chosen industries, shaping the future for the benefit of all its stakeholders – Sustaining Growth, Empowering Lives and Nurturing Communities. Guided by its operating principles and core values, the Company's mission is to execute its business in Offshore & Marine, Property, Infrastructure and Investments profitably, safely and responsibly.

<sup>3</sup> This roadmap includes four broad areas for sustainable growth: (1) *Business*: Setting the overarching strategies, targets, and key actions to be undertaken by the business units; (2) *People*: Building a robust succession pipeline and continued strong employee satisfaction; (3) *Process*: Pursuing excellence in safety, productivity and innovation; and (4) *Corporate Citizenry*: Formalising and further organising community outreach efforts to positively impact communities in which the Group operates.

### An Effective Board

Our Board fully understands that they must act in the best interest of the Company at all times, are accountable to the shareholders and have the responsibility to safeguard the interests of all shareholders. In this aspect, the Board and management fully appreciate that fundamental to good corporate governance is an effective and robust Board whose members engage in open and constructive debate and challenge management on its assumptions and proposals.

### Board Information

To effectively engage the management, the Board, in particular, the non-executive directors, must be kept well informed of the Company's business and affairs and be knowledgeable about the industry in which the businesses operate. The Company has therefore adopted initiatives to put in place processes to ensure that the non-executive directors are well supported by accurate, complete and timely information, have unrestricted access to management, and have sufficient time and resources to discharge their oversight function effectively.

These initiatives include regular informal meetings for management to brief the directors on prospective deals and potential developments at an early stage before formal board approval is sought, and the circulation of relevant information on business initiatives, industry developments and analyst and press commentaries on matters in relation to the Company or the industries in which it operates. A two-day off-site board strategy meeting is organised annually for in-depth discussion on strategic issues

and direction of the Group, to give the non-executive directors a better understanding of the Group and its businesses and to provide an opportunity for the non-executive directors to familiarise themselves with the management team so as to facilitate the Board's review of the Group's succession planning and leadership development programme.

### Board Competency & Diversity

The competencies and skillsets of the directors and the composition of the Board play a role in the overall effectiveness of the Board. At Keppel, the NC ensures that the Board and board committees comprise directors who, as a group, provide core competencies required to exercise effective oversight and direction.

For FY 2016, the NC is satisfied that the Board and the board committees comprise directors, who as a group, provide an appropriate balance and diversity of skills, experience, gender, knowledge of the Group, core competencies such as accounting or finance, business or management experience, human resource, risk management, technology, mergers and acquisitions, legal, international perspective, industry knowledge, strategic planning experience and customer-based experience or knowledge, required for the Board and the board committees to be effective.

In this respect, the NC recognises the merits of gender diversity in relation to the composition of the Board and, in identifying suitable candidates for new appointment to the Board, would ensure that female candidates are included for

consideration. Having said that, gender is but one aspect of diversity and new directors will continue to be selected based on objective criteria set as part of the process for appointment of new directors and Board succession planning. In FY 2016, there was one female director out of a total of nine directors.

### Board Evaluation

Our Board has in place formal processes for assessing the effectiveness of the Board as a whole and of its board committees, the contribution by each individual director to the effectiveness of the Board as well as the effectiveness of the Chairman of the Board. To ensure that the assessments are done promptly and fairly, the Board has appointed an independent third party coordinator to assist in collating and analysing the returns of the Board members. Such assessments help to improve the overall effectiveness of the Board by providing opportunities for the directors to give constructive feedback and helping them to focus on their key responsibilities.

### Training

The directors are provided with continuing education in areas such as directors' duties and responsibilities, corporate governance, changes in financial reporting standards, changes in the Companies Act, continuing listing obligations and industry-related matters, so as to update and refresh them on matters that may affect or enhance their performance as board or board committee members. A training programme is also in place for directors in areas such as accounting, finance, risk governance and management, the roles and responsibilities of a director of a listed company and industry-specific



*Keppel's Board Safety Committee regularly conducts site visits to the Group's operations in Singapore and overseas.*

## Corporate Governance

matters. Site visits are also conducted periodically for directors to familiarise them with the operations of the various businesses so as to enhance their performance as board or board committee members.

### Board Composition & Succession Planning

There is a process of refreshing the Board progressively over time so that the experience of longer serving directors can be drawn upon while tapping into new external perspectives and insights of more recent appointees. The Board believes that orderly succession and renewal is achieved as a result of detailed planning, where the appropriate composition of the Board is continually under review.

### Appointment & Re-appointment of Directors

The NC is responsible for reviewing the succession plans for the Board, and has put in place a formal process for the renewal of the Board and the selection of new directors. The NC leads the process and makes recommendations to the Board as follows:

- (1) NC annually reviews the balance and diversity of skills, experience, gender and knowledge required by the Board and the size of the Board which would facilitate decision-making.
- (2) In light of such reviews and in consultation with management, the NC assesses if there is any inadequate representation in respect of any of those attributes and if so, determines the role and the desirable competencies for a particular appointment.
- (3) External help (e.g. Singapore Institute of Directors, search consultants, open advertisement) may be used to source for potential candidates if need be. Directors and management may also make recommendations.
- (4) NC meets with the shortlisted candidate(s) to assess suitability and to ensure that the candidate(s) is/are aware of the expectations and the level of commitment required.
- (5) NC makes recommendations to the Board for approval.

All new appointments are subject to the recommendation of the NC based on the following objective criteria:

- (1) Integrity
- (2) Independent mindedness
- (3) Diversity – Possess core competencies that meet the needs of the Company

and complement the skills and competencies of the existing directors on the Board

- (4) Ability to commit time and effort to carry out duties and responsibilities effectively
- (5) Track record of making good decisions
- (6) Experience in high-performing companies
- (7) Financial literacy

The NC is also responsible for re-nomination having regard to the director's contribution and performance (such as attendance, preparedness, participation and candour), with reference to the results of the assessment of performance of the individual director by his/her peers.

The directors submit themselves for re-nomination and re-election at regular intervals of at least once every three years. Pursuant to the Company's constitution, one-third of the directors retire from office at the Company's annual general meeting, and a newly appointed director must submit himself/herself for re-election at the annual general meeting immediately following his/her appointment.

### Remuneration Framework

The Remuneration Committee ("RC") assists the Board to ensure that remuneration policies and practices are sound in that they are able to attract, retain and motivate without being excessive, and thereby maximise shareholder value.

The RC recommends to the Board for endorsement a framework of remuneration and the specific remuneration packages for each director and key management personnel. The RC also reviews the remuneration of senior management and administers the KCL Share Option Scheme in respect of the outstanding options granted prior to the termination of the KCL Share Option Scheme at end-2010, the KCL Restricted Share Plan (the "KCL RSP") and the KCL Performance Share Plan (the "KCL PSP").

To enhance objectivity, the RC comprises entirely non-executive directors, three out of four of whom (including the Chairman) are independent.

The RC has access to expert advice from external remuneration consultants where required. In FY 2016, the RC sought views on market practice and trends from external remuneration consultants, Aon Hewitt. The RC undertook a review of the independence and objectivity of the external remuneration consultants through discussions with the external remuneration

consultants, and has confirmed that the external remuneration consultants had no relationships with the Company which would affect their independence and objectivity.

### Executive Director & other Key Management Personnel

The Company advocates a performance-based remuneration system that is highly flexible and responsive to the market, Company's, business unit's and individual employee's performance.

In designing the compensation structure, the RC seeks to ensure that the level and mix of remuneration is competitive, relevant and appropriate in finding a balance between current versus long-term compensation, and between cash versus equity incentive compensation. The total remuneration mix comprises three key components: annual fixed cash, annual performance incentive, and the KCL Share Plans. The annual fixed cash component comprises the annual basic salary plus any other fixed allowances which the Company benchmarks with the relevant industry market median. The annual performance incentive is tied to the Company's, business unit's and individual employee's performance, inclusive of a portion which is tied to Economic Value Added (EVA) performance. The KCL Share Plans are in the form of two share plans approved by shareholders, the KCL RSP and the KCL PSP. The EVA performance incentive plan and the KCL Share Plans are long-term incentive plans. Executives who have a greater ability to influence Group outcomes have a greater proportion of overall reward at risk.

The RC exercises broad discretion and independent judgment in ensuring that the amount and mix of compensation are aligned with the interests of shareholders and promote the long-term success of the Company. The mix of fixed and variable reward is considered appropriate for the Group and for each individual role.

The compensation structure is directly linked to corporate and individual performance, both in terms of financial, non-financial performance and the creation of shareholder wealth. This link is achieved in the following ways:

- (1) by placing a significant portion of executives' remuneration at risk ("At Risk component") and in some cases, subject to a vesting schedule;
- (2) by incorporating appropriate key performance indicators ("KPIs") for awarding of annual cash incentives:



- a. There are four scorecard areas that the Company has identified as key to measuring the performance of the Group – (i) Financial; (ii) Process; (iii) Stakeholders; and (iv) People. Some of the key sub-targets within each of the scorecard areas include key financial indicators, safety goals, risk management and controls measures, corporate social responsibility activities, employee engagement, talent development and succession plan;
  - b. The four scorecards areas have been chosen because they support how the Group achieves its strategic objectives. The framework provides a link for staff to understand how they contribute to each area of the scorecard, and therefore to the Company's overall strategic goals. This is designed to achieve a consistent approach and understanding across the Group;
- (3) by selecting performance conditions such as Return on Equity, Total Shareholder Return and EVA for equity awards that are aligned with shareholder interests;
  - (4) by requiring those KPIs or conditions to be met in order for the At Risk components of remuneration to be awarded or to vest; and
  - (5) by forfeiting the At Risk components of remuneration when those KPIs or conditions are not met at a satisfactory level.

The RC also recognises the need for a reasonable alignment between risk and remuneration to discourage excessive risk taking. Therefore, in determining the compensation structure, the RC had taken into account the risk policies and risk tolerance of the Group as well as the time horizon of risks, and incorporated risk-adjustments into the compensation structure through several initiatives, including but not limited to:

- (1) prudent funding of annual cash incentives;
- (2) bonus deferrals under the EVA performance incentive plan;
- (3) vesting of contingent share awards under the KCL Share Plans being subject to KPIs and/or performance conditions being met; and
- (4) potential forfeiture of variable incentives in any year due to misconduct.

The RC is of the view that the overall level of remuneration is not considered to be at a level which is likely to promote behaviours contrary to the Group's risk profile.

In determining the actual quantum of variable component of remuneration, the RC had taken into account the extent to which the performance conditions have been met. The RC is therefore of the view that remuneration is aligned to performance during FY 2016.

In order to align the interests of the executive director and key management personnel with that of shareholders, the executive director and key management personnel are remunerated partially in the form of shares in the Company and are encouraged to hold such shares while they remain in the employment of the Company.

The directors, the CEO and the key management personnel (who are not directors or the CEO) are remunerated on an earned basis and there are no termination, retirement and post-employment benefits that are granted over and above what has been disclosed.

#### Non-Executive Directors

Each of the non-executive directors (including the Chairman) will receive 70% of his/her total directors' fees in cash and 30% in the form of KCL shares ("Remuneration Shares") (both amounts subject to adjustment as described below).

The actual number of Remuneration Shares, to be purchased from the market on the first trading day immediately after the date of the Annual General Meeting ("Trading Day") for delivery to the respective non-executive directors, will be based on the market price of the Company's shares on the Singapore Exchange Securities Trading Limited (the "SGX") on the Trading Day.

The actual number of Remuneration Shares will be rounded down to the

nearest thousand and any residual balance will be paid in cash. Such incorporation of an equity component in the total remuneration of the non-executive directors is intended to achieve the objective of aligning the interests of the non-executive directors with those of the shareholders' and the long-term interests of the Company.

In FY 2016, the Group undertook several rightsizing measures (in particular the offshore and marine business) to stay ahead in the tough operating environment. In light of the continued uncertainties looming over the offshore and marine industry, KCL directors, key management personnel and the Group's senior management took a further step and collectively volunteered for a fee and base pay reduction respectively. Besides exemplifying solidarity across the Group, this also signalled the importance of maintaining a flexible cost structure.

The aggregate directors' fees for non-executive directors is subject to shareholders' approval at each annual general meeting.

Please refer to pages 70 to 74 of the Company's Report to Shareholders 2016 for details on the remuneration framework.

#### Risk Management & Internal Controls

The Board, supported by the Audit Committee ("AC") and Board Risk Committee ("BRC"), oversees the Group's system of internal controls and risk management.

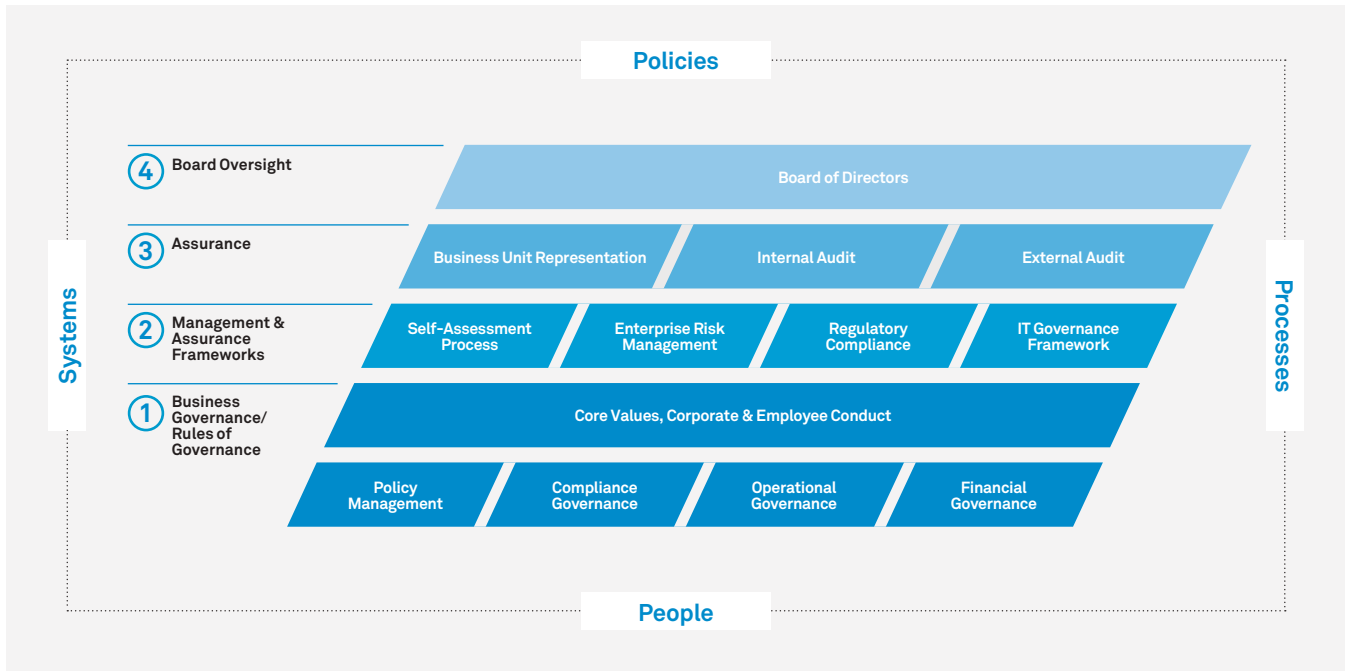
The AC's primary role is to assist the Board in ensuring the integrity of financial reporting and providing assurance that there is a sound system of internal controls in place. It is supported by Group Internal



Stakeholder engagement is a key performance indicator in the Company's scorecard. The investment community is a key stakeholder, and is regularly engaged through site visits.

## Corporate Governance

### Keppel's System of Management Controls



Audit, which provides independent assurance to the AC to ensure that the Company maintains a sound system of internal controls by regular monitoring of key controls and procedures and ensuring their effectiveness, undertaking investigations as directed by the AC, and conducting regular in-depth audits of high risk areas. In this aspect, Group Internal Audit conducts regular reviews of the adequacy and effectiveness of the Group's material internal controls, including financial, operational, compliance and information technology controls. Any material non-compliance or failures in internal controls and recommendations for improvements are reported to the AC.

The BRC reviews and guides management in the formulation of risk policies and processes to effectively identify, evaluate and manage significant risks to safeguard shareholders' interests and the Group's assets. The Committee reports to the Board on critical risk issues, material matters, findings and recommendations in respect of significant risk matters, and on an annual basis, the adequacy and effectiveness of the risk management system including financial, operational, compliance and information technology controls. In this aspect, the Group is guided by a set of Risk Tolerance Guiding Principles, as disclosed on page 36 of this report. The Group also has a Risk Management Assessment Framework

which was established to facilitate the Board's assessment on the adequacy and effectiveness of the Group's risk management system. The framework spells out the governing policies, processes and systems pertaining to each of the key risk areas of the Group, and assessments are made on the adequacy and effectiveness of the Group's risk management system in managing each of these key risk areas.

#### System of Management Controls Framework

Keppel's System of Management Controls Framework (the "Framework") outlines the Group's internal control and risk management processes and procedures. The Framework comprises three Lines of Defence towards ensuring the adequacy and effectiveness of the Group's system of internal controls and risk management

Under the first Line of Defence, management is required to ensure good corporate governance through the implementation and management of policies and procedures relevant to the Group's business scope and environment. Such policies and procedures govern financial, operational, information technology and regulatory compliance matters and are reviewed and updated periodically. Compliance governance is governed by the respective regulatory compliance management committees and working teams chaired by business

owners. Employees are also guided by the Group's Core Values and expected to comply strictly with the Employee Code of Conduct.

Under the second Line of Defence, significant business units are required to conduct a self-assessment exercise on an annual basis. This exercise requires such business units to assess the status of their respective internal controls and risk management via self-assessment. Where required, action plans are developed to remedy identified control gaps. Under the Group's Enterprise Risk Management Framework, significant risks areas of the Group are also identified and assessed, with systems, policies and processes put in place to manage and mitigate the identified risks. Regulatory Compliance supports and works alongside business management to ensure relevant policies, processes and controls are effectively designed, managed and implemented to ensure compliance risks and controls are effectively managed.

Under the third Line of Defence, to assist the Group to ascertain the adequacy and effectiveness of the Group's internal controls, business units are required to provide the Group with written assurances as to the adequacy and effectiveness of their systems of internal controls and risk management. Such assurances are also sought from the

Group's internal and external auditors based on their independent assessments.

### Internal Policies

The Group has communicated a comprehensive set of policies to employees as part of its commitment to maintaining a robust system of risk management and internal controls. These policies are disseminated via email and accessible to employees. As and when there are updates to the policies, the updated policies are broadcasted and disseminated Group-wide.

### Code of Conduct

The Keppel Group considers it important that all employees understand the rules of conduct for which they are accountable, in accordance with the laws and regulations of all the countries in which the Group operates, and our own Group policies. There must be a strong commitment to practise good business ethics across the Group and Keppel employees must always act with the highest integrity, guided by the Keppel Core Values.

As part of the Group's commitment to strengthen regulatory compliance, the Keppel Regulatory Compliance Governance Structure was developed in FY 2015, and key components of the structure such as the Group RCMC and Group RCWT were operationalised in FY 2016.

#### (1) Employee Code of Conduct

The Company's Employee Code of Conduct sets out the principles of business conduct expected of all directors, officers and employees. It provides the Group's anti-bribery stance and position on gifts and hospitality, facilitation payments and dealings with associates, and requires all employees and officers of the Group to avoid any conflict between their interests and interests of the Group in dealing with suppliers, customers and other third parties.

To set the tone from the top, the Company periodically disseminates Group-wide Keppel Group Anti-Bribery and Corruption Statements, endorsed by KCL CEO, to emphasise the Group's long-standing policy to conduct business with integrity, in an ethical and proper manner, and in compliance with applicable laws and regulations, and require all employees to comply with the Code and its values

and apply them in all aspects of day-to-day work.

The Employee Code of Conduct was included as part of the mandatory annual e-training and assessment covering key policies. As part of the same exercise, approximately 6,500 directors, officers and employees acknowledged that they had read and understood the Employee Code of Conduct including declaration of any potential conflict of interest. All new employees are also provided a copy of the Employee Code of Conduct and are required to acknowledge their understanding of its content.

Training seminars on the Employee Code of Conduct are also conducted regularly. For FY 2016, training courses were conducted for over 700 employees from selected business units to guide the employees in the implementation of the rules and procedures within the Code including emphasis on the Group's zero tolerance stance against any form of illegal activity, including bribery and corruption involving its employees or associates.

Employees are encouraged to seek clarification and guidance if they are unclear on how any aspect of the Code of Conduct applies to their jobs or a particular matter, or the legality or integrity of a particular course of action. Employees who violate the Code of Conduct may face disciplinary action, including suspension or termination of employment.

#### (2) Supplier Code of Conduct

In FY 2016, the Company also established the Supplier Code of Conduct to integrate Keppel's sustainability principles across its supply chain, and positively influence the environmental, social and governance performance of its suppliers. Suppliers of the Keppel Group of companies are expected to abide by the Supplier Code of Conduct, which covers areas pertaining to business conduct, labour practices, safety and health, and environmental management.

### Other Policies

The Company also has various policies including Insider Trading, Competition Law and Personal Data Protection to govern practices of the Group and ensure awareness and compliance with relevant laws and regulations. Business units also have their respective operational policies

and standard operating procedures, including approval limits for financial commitments and procurement policies, to mitigate risks of fraud.

### Reporting & Investigation

The Keppel Whistle-Blower Protection Policy has been in place since 1 September 2004 to encourage reporting in good faith of suspected reportable conduct by establishing clearly defined processes through which such reports may be made with confidence that employees and other persons making such reports will be treated fairly and, to the extent possible, protected from reprisal.

Reportable conduct refers to any act or omission by an employee of the Group or contract worker appointed by a company within the Group, which occurred in the course of his/her work (whether or not the act is within the scope of his/her employment) which in the view of a Whistle-Blower acting in good faith, is:

- (1) dishonest, including but not limited to theft or misuse of resources within the Group;
- (2) fraudulent;
- (3) corrupt;
- (4) illegal;
- (5) other serious improper conduct;
- (6) an unsafe work practice; or
- (7) any other conduct which may cause financial or non-financial loss to the Group or damage to the Group's reputation.

The AC reviewed the policy and was satisfied that arrangements are in place for the independent investigation of such matters and for appropriate follow-up action. To facilitate the management of incidences of alleged fraud or other misconduct, the AC is guided by a set of guidelines to ensure proper conduct of investigations and appropriate closure actions following completion of the investigations, including administrative, disciplinary, civil and/or criminal actions, and remediation of control weaknesses that perpetrated the fraud or misconduct so as to prevent a recurrence.

For more details on the reporting and investigation mechanism under the Keppel Whistle-Blower Protection Policy, please refer to pages 82 and 83 of the Company's Report to Shareholders 2016.

## Risk Management

We adopt a balanced approach to risk management, undertaking only appropriate risks to optimise returns.

Notwithstanding the headwinds, we continued a disciplined pursuit of new opportunities and revenue streams to safeguard shareholders' interests and the Group's assets. Supported by a robust risk management system, we are able to respond effectively to shifting business demands and seize opportunities that create value for our stakeholders.

### Robust Enterprise Risk Management Framework

Keppel's Board is responsible for governing risks and ensuring that management maintains a sound system of risk management and internal controls. Assisted by the Board Risk Committee (BRC), the Board provides valuable advice to management in formulating the risk management framework, policies and guidelines. Our management surfaces key risk issues for discussion with the BRC and the Board regularly.

The terms of reference for the BRC are disclosed on page 79 of the Company's Report to Shareholders 2016.

The Board has put in place three Risk Tolerance Guiding Principles for the Group. These Principles serve to determine the nature and extent of the significant risks, which our Board is willing to take in achieving its strategic objectives.

These principles are:

- 1) Risk taken should be carefully evaluated, commensurate with rewards and in line with the Group's core strengths and strategic objectives.
- 2) No risk arising from a single area of operation, investment or undertaking should be so huge as to endanger the entire Group.
- 3) The Group does not condone safety breaches or lapses, non-compliance with laws and regulations, as well as acts such as fraud, bribery and corruption.

Our risk governance framework is set out on pages 75 to 77 under Principle 11 (Risk Management and Internal Controls) of the Company's Report to Shareholders 2016. This framework facilitates management and the BRC in determining the adequacy and effectiveness of the Group's risk management system. Risk management is an integral part of decision-making across the Group. We recognise the dynamic environment in which the Group operates, and we continue to refine the framework where necessary, to ensure strong governance across the Group.

Keppel's Enterprise Risk Management (ERM) framework, a component of Keppel's System of Management Controls,

provides the Group with a holistic and systematic approach to risk management. It outlines the reporting structure, monitoring mechanisms, processes and tools, as well as policies and limits, in addressing the Group's key risks.

Our ERM framework is constantly refined, ensuring relevance in a dynamic operating environment. References are made to the Singapore Code of Corporate Governance, ISO 31000, ISO 22313 and the Guidebook for Audit Committees.

A Risk and Compliance Committee, comprising relevant subject matter champions across the business units, drives and coordinates Group-wide initiatives. We keep abreast of the latest developments and best practices by participating in industry seminars and interacting with risk management practitioners.

As a Group, we adopt a balanced approach to risk management. As not all risks can be eliminated, we will only undertake appropriate and well-considered risks to optimise returns for the Group.

### Strategic Risk Market & Competition

The Group's strategic risks comprise market and competition risks. These

*As part of the Group's business continuity measures, exercises such as flu pandemic simulations are carried out.*



include market driven forces, evolving competitive landscape, changing customer demands and disruptive innovation. The Group remains vulnerable to a number of external factors including uncertainties in the global economy, implications from geopolitical developments on globalisation and threats of disruptive technology. These risks receive constant high-level attention throughout the year. We hold strategy meetings to review business strategies, formulate responses and take pre-emptive action against these risks.

The BRC guides the Group in formulating and reviewing risk policies and limits. These are subject to periodic reviews to ensure they continue to support business objectives and are aligned to our risk tolerance level. Taking into consideration the prevailing business climate and the Group's risk appetite, the policies aim to address risks effectively and proactively.

### **Investments & Divestments**

We have an established process for evaluating investment and divestment decisions. Investments are monitored to ensure they are on track in meeting the Group's strategic intent, investment objectives and returns. These investment decisions are guided by investment parameters set on a Group-wide basis. Together with the Board, the Investment & Major Projects Action Committee (IMPAC) guides the Group to take thoughtful risks in a controlled manner, exercising the spirit of enterprise as well as financial discipline to earn the best risk-adjusted returns on invested capital.

Investment risk assessment involves rigorous due diligence, feasibility studies and sensitivity analyses of key assumptions and variables. Some factors considered in the assessment include alignment to Group strategy, financial viability, country-specific political and regulatory developments, contractual risk implications as well as lessons learned. The investment portfolio is constantly monitored to ensure that performance is on track to meet the Group's strategic intent and investment returns.

### **Human Resources**

We maintain a significant emphasis on attracting and building a talent pool. This includes nurturing employees, maintaining good industrial relations and fostering a conducive work environment. The Group continues to focus on strengthening succession planning and bench strength.

We recognise the importance of having a risk-centric mindset and the ability to identify, assess, develop and implement mitigation actions, as well as monitor risks. Keppel Leadership Institute, established as a global centre to equip leaders with the capabilities to drive Keppel's growth, helps to inculcate this mindset by embedding risk management in its key leadership courses.

### **Operational Risk Project Management**

From the stage of initiation through to completion, risk management processes are integrated within project management to facilitate early risk detection and proactive management. The Group adopts a systematic assessment and monitoring process to help manage the key risks for each project. Particular attention is given to technically challenging and high-value projects, including greenfield developments, as well as those that involve new technology or operations in a new country. Projects are managed in accordance to the respective country's environmental laws and labour practices.

At the project execution stage, we carry out project reviews and quality assurance programmes to address issues involving cost, schedule and quality. Project Key Risk Indicators are used as early warning signals. In addition, we conduct knowledge-sharing workshops to share best practices and lessons learnt across the Group. All these help to ensure that projects are completed on time and within budget, while meeting safety and quality standards, as well as contract obligations.

### **Health, Safety & Environment**

Maintaining a high level of health, safety and environment (HSE) standards is of paramount importance to the Group. As such, we are constantly raising awareness and building a HSE culture at the ground level. Key initiatives include driving a zero fatality strategy with a roadmap focused on aligning Hazard Identification Risk Assessment standards across our global operations, enhancing competency of employees performing safety-critical tasks, strengthening operational controls, as well as developing more proactive and leading matrices to monitor HSE performance. Environmental management practices in key operating sites are also closely monitored. As a Group, we continue to embrace and leverage technology to improve HSE processes and systems.

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**Our robust risk management system allows us to respond effectively to shifting business demands and seize opportunities for value creation.**

## Risk Management

### Business & Operational Processes

Through ongoing efforts to streamline business processes, we have established a common shared services platform which allows us to achieve cost savings, improve efficiency and productivity, as well as enhance governance, compliance and control.

We adopted ISO standards and certifications to achieve standardisation of processes and best practices. In addition, procedures relating to defect management, operations, project control and supply chain management were established to improve quality of deliverables. We conduct regular reviews of policies and authority limits to ensure that they remain relevant in meeting changing business requirements.

### Business Continuity

We are committed to enhancing operational resilience through a robust Business Continuity Management (BCM) Plan that will equip us to respond effectively to disruptions, while continuing with critical business functions and minimising the impact on our people, operations and assets. As a Group, we are cognisant of the increasing threat of terrorism and have increased efforts in reviewing and testing our operational preparedness and effectiveness of these plans. Follow up actions are taken to strengthen operational resilience and key learning points are documented.

Crisis management and communication procedures have also been embedded

into the Group's BCM processes. These procedures are constantly refined to allow us to respond in an orderly and coordinated way, as well as to expedite recovery. Our focus is on building capabilities to respond to crises effectively while safeguarding our people, assets and the interests of our stakeholders.

### Information Technology

The Group has in place an Information Technology (IT) security framework to address evolving IT security threats such as hacking, malware, mobile threats and loss of data.

Our IT security, governance and control have been strengthened through the alignment of IT policies, processes and systems, and the consolidation of servers and storages. We have also appointed IT security officers and implemented guided self-assessment to identify IT security gaps.

Extensive training, including assessment exercises, have been conducted on user security education to heighten awareness of IT threats. Measures and considerations have also been taken to safeguard against loss of information, data security, and prolonged service disruption of critical IT systems.

### Compliance Risk Laws, Regulations & Compliance

Given the geographical diversity of our businesses, we closely monitor developments in laws and regulations in countries where the Group operates,

to ensure that our businesses and operations comply with all relevant laws and regulations. We regularly engage with local government authorities and agencies to keep abreast of changes in regulations.

Recognising that non-compliance with laws and regulations has potential significant reputational and financial impact, particular emphasis is placed on regulatory compliance in all our operations. More details on areas taken by the Group in operationalising regulatory compliance are set out on page 95 of the Company's Report to Shareholders 2016.

### Financial Risk Fraud, Misstatement of Financial Statements & Disclosures

We continue to maintain a strong emphasis on ensuring financial statements are accurate and presented fairly in accordance with applicable financial reporting standards and framework. Where appropriate, we leverage the expertise of the engaged auditors in the interpretation of financial reporting standards and changes. Regular external and internal audits are conducted to provide assurance on accuracy of financial statements and adequacy of the control framework supporting the statements. We hold regular training and education programmes to enhance competency of finance managers across the Group. Furthermore, Control Awareness workgroups are organised to share and strengthen knowledge, to improve the

*As part of continuous efforts to foster a compliance-centric culture, regular compliance trainings and workshops are carried out across the Group, in Singapore and overseas.*



control environment and establish consistent practices.

Keppel's System of Management Controls framework outlines the Group's internal control and risk management processes and procedures. For more details on the framework, please refer to page 76 of the Company's Report to Shareholders 2016.

### Financial Management

Financial risk management relates to our ability to meet financial obligations and mitigate credit, liquidity, currency and interest rate risks. Policies and financial authority limits are reviewed regularly to incorporate changes in the operating and control environment.

At Keppel, we are focused on financial discipline, deploying our capital to earn the best risk-adjusted returns and maintaining a strong balance sheet to seize opportunities. This includes the evaluation of counterparties against pre-established guidelines.

For more details on the Group's financial risk management, please refer to pages 56 and 57 of the Company's Report to Shareholders 2016.

Impact assessment and stress tests are performed to gauge the Group's exposure to changing market situations, allowing for informed decision-making and implementation of prompt mitigating actions. We also regularly monitor the concentration of exposure in the countries where the Group operates.

### Risk-Centric Culture

Effective risk management hinges not only on systems and processes, but also on mindsets and attitudes. The Group fosters a risk-centric culture through four key areas.

#### 1. Leadership

Our management is committed to fostering a strong risk-centric culture, showing strong support for risk management initiatives. Key messages encouraging prudent risk-taking in decision-making and business processes are interwoven into major meetings, speeches and publications.

#### 2. Risk Management Process

An integral aspect of strategic and budget reviews includes investment and project planning risk management at all levels of the businesses. As part of the process, appropriate tools and risk management methodology are applied.

### 3. Training & Communication

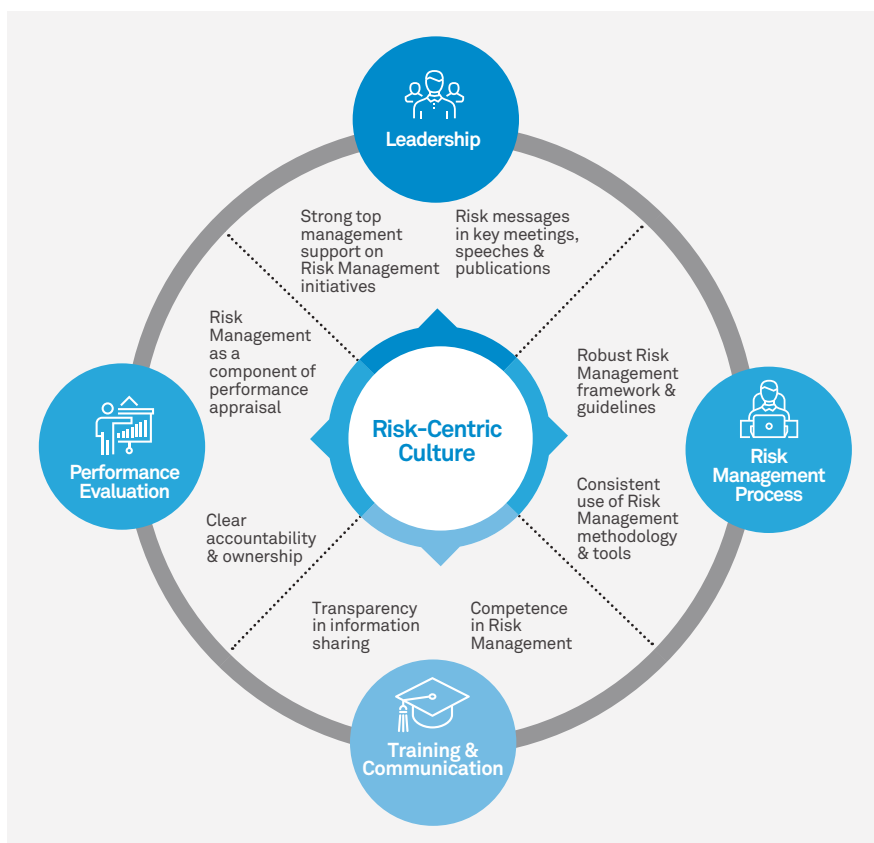
Workshops are conducted regularly to enhance risk management competency across the Group. Through various forums and in-house publications, training and communication programmes are also carried out to reinforce discipline and garner greater awareness.

### 4. Performance Evaluation

We seek to raise the accountability of our employees for risk management through the performance evaluation process. A Group-wide survey is conducted periodically to assess the level of risk awareness amongst employees.

### Proactive Risk Management

We remain vigilant against emerging threats that may affect our different businesses. Through close collaboration with stakeholders, we will continue to review our risk management system to ensure that it remains adequate and effective.



# Environmental Performance

## Performance Overview

### What we said in 2016

Continue to enhance operational efficiency across the Group to optimise resources such as water and energy, and to reduce waste generated.

Certify more operating facilities to the ISO 14001 Environmental Management System.

### What we did in 2016

Initiated the set-up of the Energy Programme Office in Keppel Offshore & Marine (Keppel O&M) to coordinate energy efficiency initiatives across our yards.

Three additional divisions under Keppel Infrastructure, namely Keppel Merlimau Cogen, Keppel Seghers and Keppel Infrastructure Services, received ISO 14001 certification.

Expanded the use of renewable energy in business operations, with Keppel Land's corporate office at Bugis Junction Towers being the first Green Mark-certified office to be fully powered by solar energy.

### What we plan to do

Continue to factor in environmental considerations in our businesses.

Continue to identify process improvements and implement measures to enhance energy efficiency and reduce emissions.



Keppel Seghers supports China's goals for sustainable development by providing technology solutions and services for waste-to-energy plants across China.



### Energy Savings

# 519,026GJ

Of energy savings expected through energy efficiency initiatives implemented in 2016 and from Keppel Land's Green Mark-certified developments, translating to estimated cost savings of about \$27 million<sup>1</sup>.

### Water Savings

# 294,361m<sup>3</sup>

Of water recycled in 2016, equivalent to approximately 5.4% of the Group's total water consumption.

## Keppel is committed to optimise efficiencies in our operations and minimise our environmental footprint.

### Overview

The proactive management of our environmental impact enables us to improve resource efficiency, reduce costs and support the global climate change agenda.

This environmental performance report includes data from the Group's major subsidiaries in Singapore and overseas operations in which the Group has significant ownership. This includes Keppel O&M and its significant subsidiaries – Keppel FELS, Keppel Shipyard and Keppel Singmarine, Keppel Land, Keppel Infrastructure, Keppel Telecommunications & Transportation (Keppel T&T) and Keppel Capital.

We have been progressively expanding the scope of our reporting to cover all major entities in the Group. The scope of our reporting in 2016 was expanded to include data from City Gas, the sole producer and retailer of town gas in Singapore. The inclusion of City Gas has resulted in a significant increase in direct energy consumption and direct carbon emissions reported.

Due to commercial sensitivity, direct energy consumption and carbon

emissions arising from Keppel Infrastructure's power generation operations are excluded from this report.

### Management Approach

The Group's risk and sustainability-based strategies are used to assess, avoid, reduce and mitigate environmental risks and impacts. We continue to focus our efforts on addressing material topics, which include enhancing energy efficiency, managing water and waste, as well as reducing our carbon emissions.

Singapore ratified the Paris Agreement on climate change in September 2016 and affirmed its support and commitment for climate action. The Singapore government had earlier released its Climate Action Plan in July 2016, which outlined the various measures to reduce its greenhouse gas emissions and enhance resilience to climate change.

In support of the global agenda on climate change, we have set a target of achieving a 16% improvement in carbon emissions from 2020 business-as-usual levels. We seek to adopt more efficient and sustainable processes, invest in green technology and include more eco-friendly features in our products.

<sup>1</sup> The electricity conversion factor used is based on the United Kingdom's Department for Environment, Food and Rural Affairs (DEFRA) 2015 Government GHG Conversion Factors for Company Reporting, whereby 1kWh = 0.0036 GJ. Estimated monetary savings are calculated based on the average electricity tariff rates in 2016 as published by Singapore Power, whereby 1kWh = \$0.1890.



*Keppel Land's corporate office at Bugis Junction Towers is fully powered by solar energy.*

## Environmental Performance

**Environmental factors are considered during the planning and design of our property developments, data centres and warehouses as well as during their operation phases.**

Most of our key business units are certified to ISO 14001 standards and other certifications including the International Sustainability Rating System and the Singapore Standard for National Green Data Centre Management System, demonstrating commitment towards environmental protection. The rigs and ships we build comply with all six annexes of the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which is the main international convention covering prevention of pollution of the marine environment by ships.

Carbon management receives oversight by the Group's Energy Efficiency Committee, which is chaired by Cindy Lim, Director of Group Corporate Development, Keppel Corporation. The committee sets targets, reviews effective implementation of carbon management efforts, and monitors and reports on performance. It comprises representatives from the respective business units, many of whom are certified energy managers.

Separately, to improve the coordination of energy efficiency initiatives across our shipyards, the Keppel O&M Energy Programme Office was set up in March 2016. The Energy Programme Office focuses on diesel management, gas management and electricity management.

### Building Sustainable Cities

The Group considers environmental factors during the planning and design of our property developments, data centres and warehouses as well as during the operation phases.

In 2016, two of Keppel Land's overseas developments, namely International Financial Centre Jakarta Tower Two in Indonesia and Sedona Hotel Yangon in Myanmar, were certified to the Building & Construction Authority of Singapore (BCA) Green Mark Platinum and BCA Green Mark Gold<sup>PLUS</sup> standards respectively. Keppel Land also encourages tenants to adopt environmental certifications such as the BCA Green Mark for Office Interior scheme and the Singapore Environment Council's Eco-Office label.

### Sino-Singapore Tianjin Eco-City

The Sino-Singapore Tianjin Eco-City (Eco-City) is on track to realising its vision of becoming a model for sustainable urbanisation since breaking ground more than eight years ago. The master developer for the project is Sino-Singapore Tianjin Eco-City Investment and Development Co., Ltd. (SSTEC), a 50-50 joint venture between a Singapore Consortium led by the Keppel Group and a Chinese Consortium led by Tianjin TEDA Investment Holding Co., Ltd. To date, there are over 70,000 people working and living in the Eco-City and over 4,700 registered companies<sup>2</sup>.

This flagship bilateral project between the governments of China and Singapore has been lauded for its eco-friendly features, such as its wide green belts, green transport, renewable energy, green buildings, 'sponge city' development as well as waste reduction and recycling initiatives.

The Eco-City has received numerous accolades, including being named China's first National Green Development

*Since breaking ground more than eight years ago, the Eco-City has become a model for sustainable urbanisation.*



Demonstration Zone, first Integrated Smart-Grid Demonstration Zone and National Green Building Base. The Low Carbon Living Lab, which is the first building in China to be awarded the Green Mark Platinum Award by the BCA, encourages test-bedding and demonstration of green building features, energy-saving building technologies and renewable energy adoption.

### Green Innovations

Keppel Data Centres Holding, a subsidiary of Keppel T&T, participated in a trial with the Info-communications Media Development Authority of Singapore to develop and deploy the world's first Tropical Data Centre. Currently, a significant portion of energy consumption in data centres goes towards keeping temperatures and humidity at low levels. By being able to function optimally at higher temperatures and humidity levels, Tropical Data Centres could reduce energy consumption by up to 40%.

### Protecting Biodiversity

Keppel Land's premier waterfront development, Corals at Keppel Bay, is home to a thriving kaleidoscope of coral reefs and marine life due to the company's efforts to conserve biodiversity. Corals at the historic King's Dock at Keppel Bay are being transplanted to enhance the existing habitat for marine life. This initiative is the first by a private developer.

### Energy

The Group's energy demand comprises a mix of direct and indirect sources of energy. Direct energy refers to primary sources of energy consumed on site by our operations, whereas indirect energy is electricity purchased from external suppliers.

The Group's primary energy source is diesel. Other direct sources of energy are petrol, furnace oil and Liquefied Petroleum Gas.

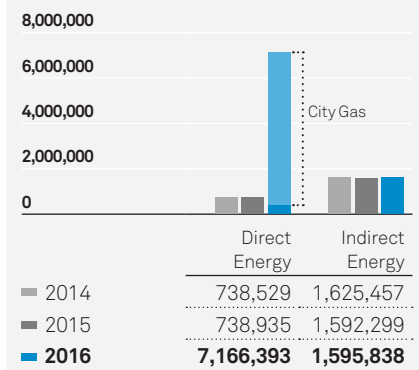
In 2016, the Group consumed 7,394,690 gigajoules (GJ) of direct energy and 1,820,611 GJ of indirect energy or electricity, compared to 1,061,515 GJ of direct energy and 1,985,171 GJ of indirect energy in 2015.

Our Singapore operations consumed 7,166,393 GJ of direct energy and 1,595,838 GJ of indirect energy in 2016, compared to 738,935 GJ of direct energy and 1,592,299 GJ of indirect energy in 2015<sup>3</sup>. The significant increase in direct energy was due to the inclusion of direct energy consumption from City Gas. Excluding contributions from City Gas, the direct energy consumption of the Group was 617,754 GJ, of which 389,456 GJ was consumed by our Singapore operations.

<sup>2</sup> These figures include the Tourism District and Central Fishing Port.

<sup>3</sup> The data excludes Keppel Land's energy consumption during the construction phase.

### Singapore Operations Direct & Indirect Energy Consumption (GJ)



Keppel Land's International Financial Centre Jakarta Tower Two in Indonesia achieved the BCA Green Mark Platinum Standard.



## Environmental Performance

**Energy savings are achieved through optimising operations and processes; adopting sustainable building designs and materials, and using energy-efficient equipment.**

### Improving Energy Efficiency

The Group is estimated to have saved 519,026 GJ<sup>4</sup> of energy from its energy efficiency initiatives in 2016 and from Keppel Land's Green Mark developments. The total energy saved is equivalent to nearly 5.6% of the Group's total energy consumption in 2016, and translates to estimated cost savings of about \$27 million<sup>5</sup> and avoidance of approximately 62,000 tonnes of carbon dioxide (t-CO<sub>2</sub>) emissions<sup>6</sup>.

These savings were achieved through the optimisation of operations and processes; technological improvements, including the adoption of more sustainable building designs and materials; and the use of energy-efficient equipment and devices.

Examples of initiatives in 2016 are:

- Electric cables were rerouted to transmit electricity via a power grid instead of the less-efficient diesel generator at Keppel FELS' yards<sup>7</sup>.
- Variable speed drives were installed to run ballast pumps<sup>8</sup> and ventilation blowers<sup>9</sup> at Keppel Shipyard as part of energy efficiency upgrades.

- Welding machines were modified at Keppel Singmarine to include idle control systems, which automatically shut down idle machines to reduce electricity consumption<sup>10</sup>.
- Fan blades were upgraded and secondary pump systems were optimised across several of Keppel DHCS' district cooling plants<sup>11</sup>.
- At Keppel Data Centres, two Diesel Rotary Uninterruptible Power Supply (DRUPS) systems have been deployed to ensure high-quality and continuous power supply<sup>12</sup>. Additionally, two units of chilled water cooling systems<sup>13</sup> and more sensor lightings<sup>14</sup> have been installed to improve energy efficiency.

### Harnessing Renewables

The Group strives to decrease reliance on fossil fuels and increase its use of renewable sources of energy.

In 2016, Keppel Land's corporate office at Bugis Junction Towers became the first Green Mark-certified office to be fully powered by solar energy. The solar energy is purchased from Keppel Electric. In this offsite solar purchase scheme, renewable energy is harvested from photovoltaic panels installed in premises operated by Keppel Infrastructure, and transferred to Keppel Land. With this new initiative, Keppel Land is expected to offset about 150 t-CO<sub>2</sub> emissions<sup>6</sup> every year.

### Water

Water is a precious resource. The Group continues to strengthen its water conservation efforts through initiatives like promoting water-saving practices, adopting water-efficient technologies

and equipment as well as implementing process improvements.

The total water consumption of the Group consists of potable water (water from local catchment and imported water), NEWater (treated wastewater from sewage), recycled water and water drawn from rivers.

In 2016, the Group consumed 5,499,136 cubic metres (m<sup>3</sup>) of water, a slight increase from 5,239,542 m<sup>3</sup> in 2015.

Our operations in Singapore consumed 4,031,622 m<sup>3</sup> of water (potable and NEWater) compared to 3,742,386 m<sup>3</sup> in 2015. The increase in water consumption was mainly due to activities at Keppel Shipyard and the inclusion of City Gas data.

### Enhancing Water Efficiency

The Automatic Blowdown Control System installed in Phase 2 of Keppel Infrastructure's Keppel Merlimau Cogen Plant measures water chemistry and computes the precise amount of water that should be discarded to maintain the quality of water used by the steam turbines to generate steam, which in turn minimises water losses, yields operating cost savings and improves operational efficiency. Since its implementation in 2015, water consumption decreased from 767 m<sup>3</sup> per day to 131 m<sup>3</sup> per day, registering a significant reduction of 82.9%.

Other water saving initiatives include installing water-efficient equipment and devices, encouraging good water usage habits as well as improving leakage inspection and response times.

<sup>4</sup> The 519,026 GJ in savings comprise savings from the reduced usage of fossil fuels, such as diesel, and a reduction in electricity consumed. The amount of savings in absolute terms is the difference in consumption before and after the implementation of an energy efficiency project. The savings are converted to energy equivalent in Gigajoules (GJ) based on the corresponding energy conversion factors for fossil fuels and electricity published in the United Kingdom's Department for Environment, Food and Rural Affairs (DEFRA) 2015 Government GHG Conversion Factors for Company Reporting, whereby 1 kWh = 0.0036 GJ and 1 tonne of diesel = 43.33 GJ.

<sup>5</sup> The electricity conversion factor used is based on the United Kingdom's Department for Environment, Food and Rural Affairs (DEFRA) 2015 Government GHG Conversion Factors for Company Reporting, whereby 1 kWh = 0.0036 GJ. Estimated monetary savings are calculated based on the average electricity tariff rates in 2016 as published by Singapore Power, whereby 1 kWh = \$0.1890.

<sup>6</sup> The electricity savings in carbon dioxide equivalent was estimated by multiplying the energy savings in kWh with the Electricity Grid Emission Factor (1 kWh = 0.4322 kg CO<sub>2</sub>) published by Singapore's Energy Market Authority.

<sup>7</sup> Savings calculated based on a reduction of 27,888 litres of diesel, which translates to 72.65 t-CO<sub>2</sub> saved.

<sup>8</sup> Savings calculated based on the installation of variable speed drives for three units of ballast pumps, operating 150 days per year, with savings of 125 kW per unit.

<sup>9</sup> Savings calculated based on the installation of 50 ventilation blowers, operating 200 days per year, with savings of 2 kW per unit.

<sup>10</sup> Savings calculated based on the modification of three welding machines, operating 360 days per year, with savings of 2 kWh per unit.

<sup>11</sup> Upgraded fan blades and secondary pump systems estimated to yield savings of 153,653 kWh and 129,476 kWh respectively.

<sup>12</sup> Savings calculated based on the installation of 2 DRUPS systems, which runs at a system efficiency of 97% as compared to conventional Uninterruptible Power Supply systems which runs at a system efficiency of 93%. Estimated savings from this is 738,887 kWh/year.

<sup>13</sup> Savings calculated based on the installation of two units of chilled water cooling systems, with savings of 821,100 kWh per year, per unit.

<sup>14</sup> The sensor lightings are expected to save 4,800 kWh/year.

Measures to conserve water at Keppel Land's buildings include the use of water-efficient fittings approved under the PUB Water Efficiency Labelling Scheme, self-closing taps and flow regulators. Keppel DC Singapore 1 and 2 were certified to the SS 577 Water Efficiency Management System in 2015 and 2016 respectively with the implementation of a Water Efficiency policy and procedures to manage water usage.

### Water Recycling

In 2016, Keppel Seghers completed a substantial part of the Doha North Sewage Treatment Works project in Qatar and handed over the wastewater and sludge treatment facilities in the project to Ashgal, the Public Works Authority. The facility is able to treat up to an average flow of 245,000 m<sup>3</sup> of wastewater a day, which will be used for non-potable purposes, thus freeing up Doha's precious drinking water supply (see page 48).

At Keppel FELS, scrap materials from the yard are reused to build passages that channel rainwater from rooftop gutters and drains to a tank for gas hose testing.

During the dry season, treated effluent water from the refuse leachate and waste water at Keppel Infrastructure's Senoko Waste-to-Energy (WTE) Plant is further treated to be used for ash quenching and fire prevention by wetting dry refuse in the bunker, reducing the demand for NEWater.

The Group recycled a total of 294,361 m<sup>3</sup> of water in 2016, which is equivalent to

approximately 5.4% of the Group's total water consumption. This is a 344% increase from 66,278 m<sup>3</sup> of water recycled in 2015. The increase was largely attributed to the optimisation of the effluent filtration system at Senoko WTE Plant.

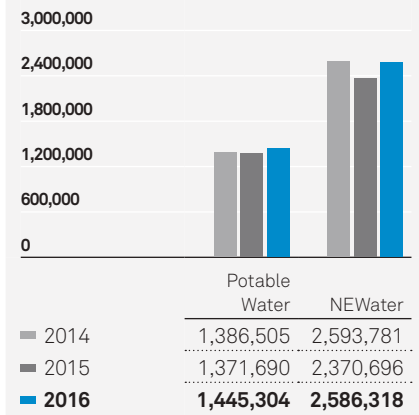
### Waste

The Group strives to minimise waste generation, increase opportunities for reusing and recycling, as well as treat and dispose of waste responsibly where other options are not practicable. Scrap metals are collected at our shipyards and WTE plants for recycling while used papers are collected and recycled across the Group's businesses. The Group organises campaigns and shares educational resources to promote a culture of recycling among employees.

In 2016, the Group recycled 297,137 tonnes (t) of refuse, which is a 39.9% increase from 212,255 t of waste in 2015. This increase is largely attributed to more scrap metals being recycled at Keppel FELS' overseas yards. Waste recycled included ferrous scrap, grits, plastic stretch wrap, paper and other office consumables. Our Singapore operations recycled 47,263 t of waste in 2016, a significant 71.9% decrease from the previous year. The decrease is attributed to the shifting of some of Keppel O&M's activities in Singapore to overseas yards.

As a Group, a total of 27,948 t of waste was sent for incineration in 2016, registering a 16.9% decrease compared to 33,636 t in 2015.

### Singapore Operations Potable Water & NEWater Used (m<sup>3</sup>)



The Senoko WTE Plant effluent filtration system reduces the amount of NEWater consumed at the plant during dry spells.

## Environmental Performance

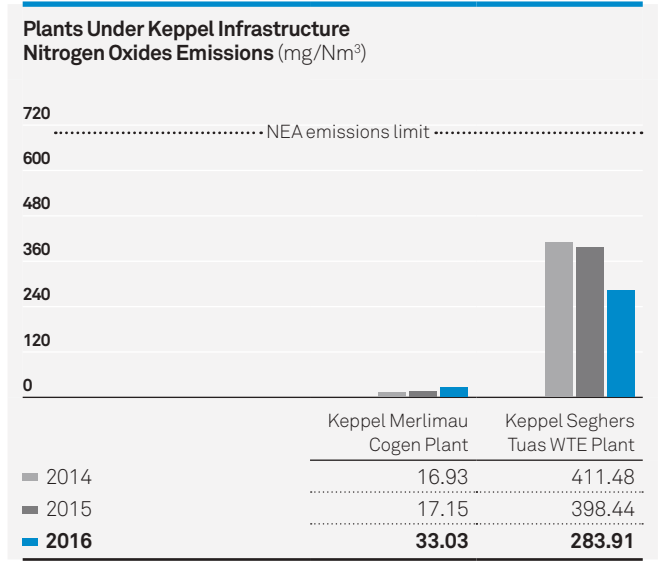
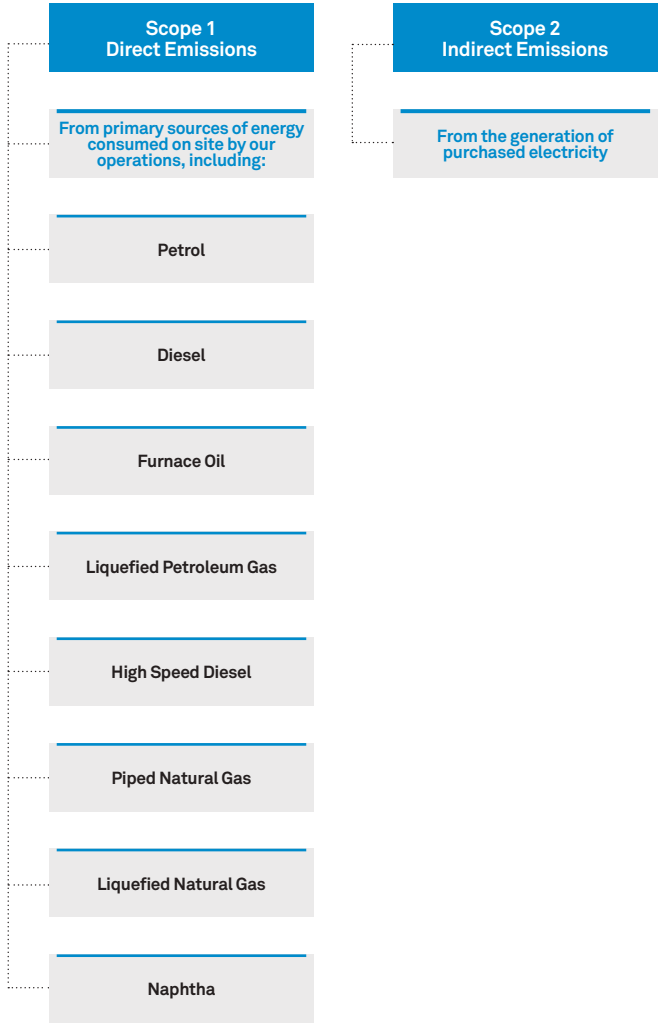
In land-scarce Singapore, refuse is incinerated to reduce the volume of waste and to remove harmful substances before disposal at the landfill. A total of 27,929 t of waste was sent for incineration in 2016, registering a 16.7% decrease compared to 33,556 t in 2015.

The Senoko WTE and Keppel Seghers Tuas WTE Plants, which are running at contracted capacities of 2,310 t/day and 800 t/day respectively, are capable of processing more than 1.2 million t of municipal solid waste per year, and in the process supply up to 550 gigawatt hours of green energy to the grid. This helps in landfill diversion by as much as 90% through reductions in the volume of waste disposed, thus contributing to an avoidance of methane emissions from landfills.

As incineration of refuse is prohibited or unavailable in some countries where Keppel O&M operates, a total of 3,815 t of municipal waste was disposed at landfill sites in 2016, a significant drop from 91,676 t of waste that was landfilled in 2015. The decrease in landfilled waste was largely due to a reduction in yard activities overseas.

There were no reports of spillages, and no sanctions pertaining to spillages that were administered by Singapore or overseas authorities on the Group in 2016.

### Classification of GHG emissions from our operations:



## Emissions & Effluents

### Carbon Emissions<sup>15</sup>

In 2016, the Group's total direct emissions from the use of fuels across the Group and the incineration of waste at WTE plants amounted to 1,205,749 t-CO<sub>2</sub>, an increase from 687,128 t-CO<sub>2</sub> in 2015, while indirect emissions from electricity use was 224,146 t-CO<sub>2</sub>, a decrease from 233,127 t-CO<sub>2</sub> in 2015.

Direct emissions for Singapore operations increased by 368,391 t-CO<sub>2</sub>, from 663,557 t-CO<sub>2</sub> to 1,031,948 t-CO<sub>2</sub> in 2016. The increase in direct emissions for both the Group and Singapore operations is mainly due to the inclusion of Scope 1 emissions from City Gas, which contributed 358,129 t-CO<sub>2</sub>.

Indirect emissions from our Singapore operations increased by 9.1% from 175,165 t-CO<sub>2</sub> in 2015 to 191,189 t-CO<sub>2</sub> in 2016, again largely due to the inclusion of City Gas emissions.

### Other Emissions & Effluents

Keppel Infrastructure continues to actively manage the emissions from its operations. Nitrogen oxides and sulphur dioxide emitted from the three plants under Keppel Infrastructure remain far below the emission standards of 700 milligrams per normal cubic metre (mg/Nm<sup>3</sup>) and 500 mg/Nm<sup>3</sup> respectively, as stipulated by Singapore's National Environment Agency (NEA) Code of Practice on Pollution Control.

In 2016, dust or particulate matter emitted by Senoko WTE Plant and Keppel Seghers Tuas WTE Plant were 10.75 mg/Nm<sup>3</sup> and 12.04 mg/Nm<sup>3</sup> respectively, which were well below the NEA emission standard of 100 mg/Nm<sup>3</sup>. Variations in emissions are dependent on the type of municipal refuse incinerated by the plants.

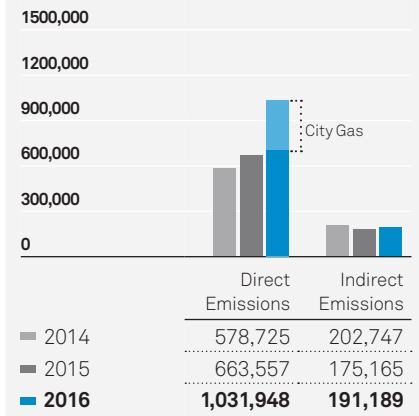
All trade effluent from our operations are treated and discharged to water courses or sewer systems in accordance with the environmental discharge limits and effluent standards in the countries of operation.

### Compliance

During the year, two property developments in Singapore were fined a total of \$67,400 for two incidences of mosquito breeding. Another property development was fined \$5,000 for noise levels over NEA's approved limit. These fines were imposed on Keppel Land's appointed main contractor, and mitigating actions have been taken to prevent recurrence of similar incidents.

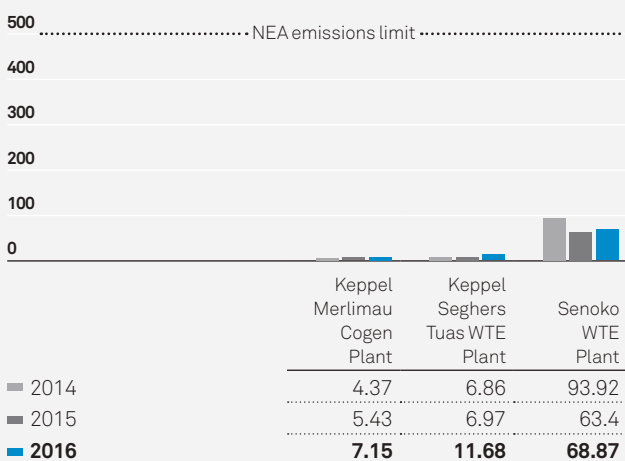
Keppel Infrastructure Trust's Senoko WTE Plant was issued fines totaling \$15,000 for three power dispatch disruption incidents relating to the Auto Penalty Scheme under the Energy Market Authority's Market Rules.

### Singapore Operations Direct Emissions & Indirect Emissions (t-CO<sub>2</sub>)

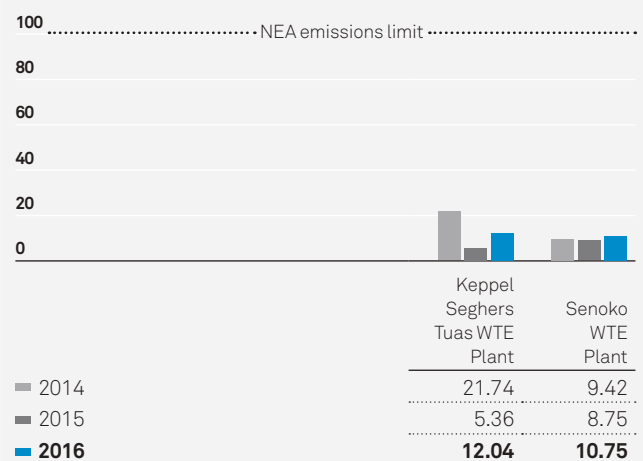


<sup>15</sup> The GHG conversion factors used for Scope 1 (direct emissions) are based on the United Kingdom's Department for Environment, Food and Rural Affairs (DEFRA) 2015 Government GHG Conversion Factors for Company Reporting. The GHG conversion factors for Scope 2 (indirect emissions) are based on the "Electricity Grid Emission Factor" for 2016 from the Energy Market Authority. The GHG emission Scopes 1, 2 and 3 are defined by the GHG Protocol, whereby Scope 1 refers to emissions from company owned and operated facilities, machines, vehicles, etc.; Scope 2 refers to emissions from the generation of purchased electricity consumed by the company; Scope 3 emissions are a consequence of the activities of the company, but occur from sources not owned or controlled by the company, such as employee commuting, business travel and the purchase of office supplies. The Group does not report on Scope 3 emissions as the boundaries for such emissions are very broad, and it is presently not feasible to track such data for a credible Scope 3 assessment.

### Plants Under Keppel Infrastructure Sulphur Dioxide Emissions (mg/Nm<sup>3</sup>)



### Plants Under Keppel Infrastructure Average Particulate Matter Emissions (mg/Nm<sup>3</sup>)



## Environmental Performance

### Special Focus

## Realisation of a Vision

### Keppel supports Qatar's vision for sustainable development with the Doha North Sewage Treatment Works.

Who would have dreamed it would be possible to build a nature sanctuary in the middle of a desert? Keppel has turned this dream into reality in a country where it hardly ever rains and temperatures soar above 40 degrees Celsius.

As part of Qatar's vision for sustainable development, Keppel Seghers, a wholly-owned subsidiary of Keppel Infrastructure, was awarded the contract for the Doha North Sewage Treatment Works (DNSTW) project by Ashghal, the Public Works Authority, in 2007.

Keppel was to design and build a wastewater treatment, water reuse and sludge treatment facility to serve the entire country, and subsequently operate and maintain this facility for 10 years. The contract is worth QR3.6 billion (S\$1.5 billion). The plant became operational in December 2015, and in July 2016, Keppel handed over the solids stream and sludge treatment facilities to the client.

Ong Tiong Guan, CEO of Keppel Infrastructure, remarked, "This project embodies the bold vision of the Qatari government to overcome environmental constraints through the use of modern technology, creating more liveable and

sustainable spaces. Keppel is happy to have played a significant role in supporting Qatar's vision for sustainable development."

The facility, spanning 16 square kilometres (km<sup>2</sup>), is the first wastewater treatment facility in Qatar to feature membrane technology. The plant is able to treat up to an average flow of 245,000 cubic metres of wastewater a day using advanced membrane and ultra-violet treatment technologies. Treated to international standards, the high-grade reclaimed water is used for non-potable purposes, thus freeing up Doha's precious drinking water supply. The plant also employs a comprehensive odour control system to minimise the impact on the surrounding environment.

As part of the project, Keppel is also developing an 8.3 km<sup>2</sup> green buffer zone – a sanctuary for migratory birds amid vast desert sands, which is set for completion in 2017. Envisioned as a public recreational park, about 95,000 trees are being planted to create this nature sanctuary. The reclaimed water is used to irrigate the green buffer zone, while the processed sludge is used as organic fertiliser or in landscaping projects.

*Recycled water from the Doha North Sewage Treatment Works has transformed the surrounding landscape into a lush oasis in the middle of the desert.*





## Powering a Cleaner Future

By converting non-recyclable waste into energy, we minimise the environmental impact of municipal waste.

Against the backdrop of rapid urbanisation, depleting landfill capacity and rising awareness of environmental and pollution issues, there is an increasing need for governments to look into sustainable waste management solutions.

In Singapore, Keppel Seghers Tuas Waste-to-Energy (WTE) Plant and Senoko WTE Plant are capable of processing more than 1.2 million tonnes of municipal solid waste per year, in the process supplying up to 550 gigawatt hours of green energy to the grid. This helps in landfill diversion by as much as 90% through a reduction in the volume of waste disposed, and contributes greatly to the reduction of methane emissions.

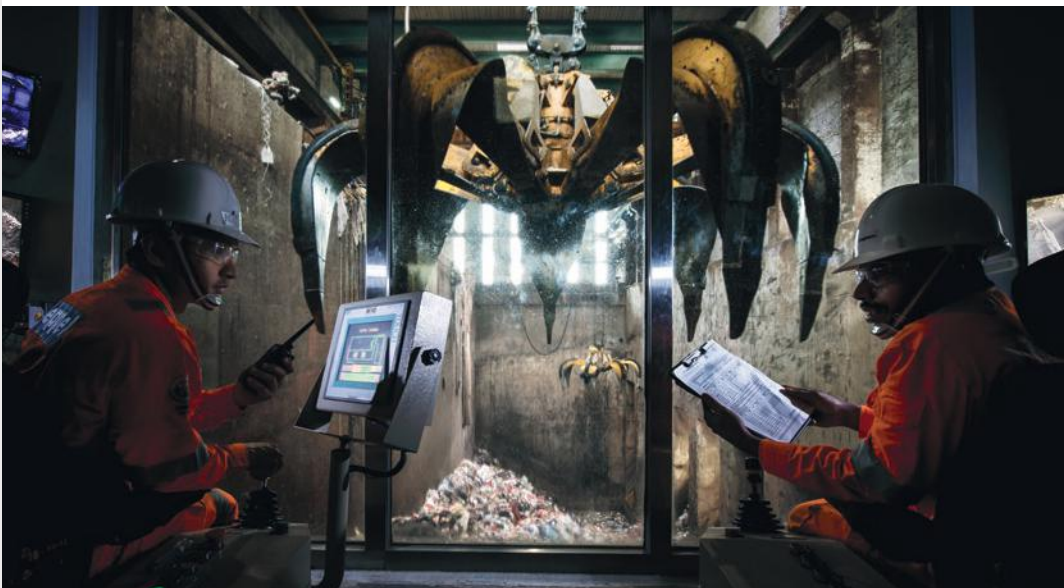
In China, driven by the government's priority in tackling environmental issues, the country has targets set for both pollutant emission reduction and environment quality improvement in its 13th Five Year Plan. The focus on green development and innovation presents

opportunities for Keppel Seghers to capture new WTE projects, as well as to deepen its footprint in China through strategic collaborations with local players.

Keppel Seghers has secured six contracts to provide WTE technology and services, including that from repeat customer Shenzhen Energy Environment Engineering Co for the Baoan WTE plant, which is slated to become the world's largest WTE facility in terms of incineration capacity. With these developments, the company continues to reinforce its position as the leader among imported WTE technology solutions providers in China.

WTE technology and services have also been gaining recognition in the Southeast Asia region as a competitive solution for municipal solid waste management, while producing renewable power. Keppel Seghers will ride on this development trend to capture opportunities in new markets.

**Through our sustainable waste management solutions, we contribute towards reductions in methane emissions and volume of waste disposed.**



*Keppel's WTE technology and services contribute to landfill diversion and reductions in methane emissions.*

# Product Excellence

## Performance Overview

### What we said in 2016

Continue to execute our projects well, delivering them safely, on time and on budget.

Continue to pursue opportunities in the non-drilling offshore and marine market.

Continue to seek new opportunities and expand our services to customers.

### What we did in 2016

Keppel Offshore & Marine (Keppel O&M) completed 21 project deliveries. These include four jackup drilling rigs, a high-specification deepwater derrick lay vessel, six Floating Production, Storage and Offloading (FPSO) projects, as well as an accommodation semisubmersible.

Keppel Land acquired waterfront sites in Vietnam and collaborated with leading developers in Myanmar and Indonesia to build residential and commercial developments.

Keppel Infrastructure was selected to Design, Build, Own and Operate Singapore's fourth desalination plant, which will treat sea water and fresh water using reverse osmosis and advanced membrane technology.

Keppel Logistics acquired a stake in e-commerce fulfillment company, Courex, to tap into the fast-growing e-commerce sector.

Keppel Capital saw the first closing of two new private equity funds – the Alpha Data Centre Fund and Alpha Asia Macro Trends Funds III.

### What we plan to do

Continue to invest prudently in research and development (R&D) and technology innovation to build new capabilities.

Explore new markets, including ways to re-purpose our offshore technology and solutions, so as to capture opportunities in the non-drilling sector.

Continue to invest strategically and opportunistically in developed and emerging markets and seek out value-enhancing projects.



We shape urban landscapes by creating vibrant and sustainable live-work-play environments in key cities.

Green Mark Awards

65

Building & Construction Authority of Singapore Green Mark Awards achieved by Keppel Land to date.

Project Deliveries

21

Projects delivered by Keppel Offshore & Marine in 2016.

## By harnessing the strengths of our businesses and upholding execution excellence, we provide world-class solutions for sustainable urbanisation.

### Overview

Driven by our core values of 'Customer Focus' and 'Agility and Innovation', Keppel delivers value-added solutions for sustainable urbanisation, taking into account the evolving needs of our customers.

We continue to strengthen our market presence by actively capturing opportunities in growth markets, drive collaboration and leverage core competencies across our business verticals, and expand our suite of solutions.

### Management Approach

Most of our key business units are certified to meet the ISO 9001 Quality Management System, ISO 14001 Environmental Management System and OHSAS 18001 Occupational Safety & Health Management System, demonstrating our commitment to execution excellence. We regularly monitor and review our operational processes to improve efficiencies and increase productivity.

To cultivate a culture of innovation across the Group, we continued to organise innovation conventions, and initiated hackathons and partnerships with technology companies. In 2016, an *InnovateKeppel* catalyst team was formed to coordinate innovation efforts across the Group.

We believe that customer engagement is essential for sustainable growth and long-term success. Through regular surveys and reviews, we seek to understand our customers' needs and enhance our products and services accordingly.

### Developments Offshore & Marine

With an extensive suite of offshore and marine solutions and continuous investment in R&D, Keppel O&M serves a wide spectrum of customers in both drilling and non-drilling markets, who continue to require various solutions for oil and gas exploration and production, subsea construction, or offshore liquefaction, amongst others.

In 2016, Keppel O&M delivered 21 major projects safely, on time and on budget. These include four jackup drilling rigs, a high-specification deepwater derrick lay vessel, six FPSO projects, as well as an accommodation semisubmersible.

Keppel O&M continues to invest in new capabilities to seize opportunities in different segments of the oil and gas industry. In 2016, it completed the acquisition of Cameron's offshore product division, which comprises the LETOURNEAU™ jackup rig designs, as well as the rig kit and aftersales and aftermarket businesses.



Keppel FELS delivered Floatel Triumph, a high-specification accommodation semi, safely and on time.

## Product Excellence

**We are committed to superior solutions and execution excellence for building enduring relationships with our customers.**

Renamed Keppel LeTourneau, the unit augments Keppel O&M's existing capabilities to provide a full-suite of end-to-end jackup rig solutions to its customers.

According to estimates by the International Energy Agency, gas is expected to be the fastest-growing fossil fuel for the next few decades, with demand rising at 1.5% per annum from now to 2040, to make up a quarter of global energy demand. Keppel is well positioned to be an industry forerunner through its extensive gas strategy that spans the value chain from liquefaction to transportation to power generation.

Through its subsidiary, Gas Technology Development, Keppel O&M signed a Memorandum of Understanding with Shell Eastern Petroleum (Shell), to jointly explore opportunities to cater to the demand for Liquefied Natural Gas (LNG) as a fuel in coastal areas, inland waterways and the international marine sectors. Keppel O&M further established a 50-50 joint venture (JV), FueLNG, with Shell to supply LNG bunkering services to vessels in the Port of Singapore. FueLNG subsequently secured its first two contracts from Shell to provide

bunkering services to two dual-fuel diesel LNG tugs, which are being built by Keppel Singmarine for Maju Maritime and Keppel Smit Towage.

Separately, Keppel Shipyard's execution of the world's first-of-its-type floating liquefaction vessel conversion for Golar LNG is on track for completion in mid-2017. The deployment of Golar Hilli will put Keppel ahead of the curve for floating LNG solutions.

Reinforcing its leading position in offshore rig design, construction and repair; ship repair and conversion; and specialised shipbuilding, Keppel O&M was conferred the 2015 APAC Company of the Year Award (Offshore & Marine Services) at the Oil and Gas Council's Asia-Pacific Oil & Gas Awards in 2016.

Three of Keppel O&M's projects, namely the semisubmersible DSS™ Series rigs, KFELS N Class rigs and the Arctic icebreakers, were recognised as Singapore's Top 50 Engineering Feats by the Institution of Engineers Singapore. This competition acknowledges engineering achievements that have made the greatest economic, infrastructural or societal impact to Singapore since 1965.

*Golar Hilli, the world's first-of-its-type floating liquefaction vessel conversion, will be completed in 2017 for work in Cameroon.*



Separately, cementing its reputation as a premier shipyard in Asia, Keppel Shipyard won the Shipbuilding & Repair Yard Award at the Seatrade Maritime Awards Asia 2016.

Recognised for its expertise in ice-class solutions, Keppel O&M presented at the prestigious Arctic Circle Assembly 2016 in Iceland on 'Singapore and the Arctic: Partnership between Academia and Business through Research and Innovation'. The presentation focused on the Arctic Tourism Hub and Near Shore Search and Rescue Hub as a part of a sustainable arctic development. Keppel Offshore & Marine Technology Centre (KOMtech) also presented research on 'Ice Structure Interaction for Arctic Offshore Developments' at the China-Nordic Arctic Cooperation Symposium at Rovaniemi Finland in 2016.

#### Property

Keppel Land continued to proactively review and seek opportunities to recycle its assets. In 2016, Keppel Land announced 11 divestments in 2016. Assets amounting to about \$680 million were monetised. As part of the Group's capital recycling strategy, Keppel Land invested \$460 million in building up its

portfolio in markets including China, Vietnam, Indonesia and Myanmar. The company's residential portfolio in Singapore and overseas comprises a 66,000-strong pipeline and close to 19,000 launch-ready homes from 2017 to 2019.

The Keppel Group received 12 awards at the Building & Construction Authority of Singapore (BCA) Awards 2016, in recognition of the Group's commitment to environmentally-friendly design and construction of its buildings and facilities.

For all completed commercial buildings in Singapore, Keppel Land has achieved its goal of achieving at least the BCA Green Mark Gold<sup>PLUS</sup> standard. Keppel Land also aims for all its new developments overseas to attain at least the BCA Green Mark Gold certification or its equivalent.

The company has garnered a total of 65 BCA Green Mark Awards to date. In 2016, Keppel Land's corporate office at Bugis Junction Towers received the BCA Green Mark for Office Interior Platinum rating. Keppel Land was also conferred the BCA Quality Excellence Award (Gold) for Developers and the BCA Universal

Design Mark (Gold) Award for its property, The Luxurie.

Keppel Land also received top accolades at the Euromoney Real Estate Awards, including Best Overall Developer for Singapore, Vietnam and Myanmar; while Alpha Investment Partners (Alpha) won the Overall Best Investment Manager. The annual Euromoney Real Estate Awards, which is open to both local and international companies, ranks the best developers, advisors, banks and investment managers globally.

#### Infrastructure

Keppel Infrastructure was selected by PUB, Singapore's national water agency, to Design, Build, Own and Operate Singapore's fourth desalination plant with a concession period of 25 years. To be operational in 2020, it will be the first plant in Singapore with the ability to treat both sea water and fresh water from the Marina Reservoir by using reverse osmosis and other advanced membrane technology.

In China, Keppel Seghers, a Keppel Infrastructure subsidiary, continues to build on its track record as a leader among imported waste-to-energy (WTE)



Keppel O&M continues to deliver high quality products that meet the needs of its customers.

## Product Excellence

technology solutions providers in the country. During the year, Keppel Seghers secured six contracts to provide WTE technology and services, including two for the Baoan WTE plant and the Nanshan II WTE plant. It is currently executing seven WTE technology packages for projects with a total incineration capacity of over 14,000 tonnes per day.

Keppel Logistics, a subsidiary of Keppel Telecommunications & Transportation (Keppel T&T), leverages innovative solutions to streamline its operations. In 2016, the company's Warehouse Management System was enhanced with a mobile application portal, an electronic Proof of Delivery system and radio frequency scanning. These new technology-enabled features will help to streamline inventory management processes as well as improve productivity and data accuracy.

In recognition of its commitment to service excellence, Keppel Logistics received the Singapore Domestic Logistics Service Provider of the Year award at the 2016 Frost & Sullivan Asia Pacific Best Practices Awards. This is the ninth award that Keppel Logistics has received from Frost & Sullivan in the last 10 years.

Capitalising on the positive market trends, Keppel Data Centres Holding (KDCH), a subsidiary of Keppel T&T, has expanded its

footprint beyond its current geographies. Together with the Alpha Data Centre Fund (Alpha DC Fund) and Keppel DC REIT, the Group has a total of 17 facilities spanning nine countries and over 1.4 million square feet of net lettable area.

KDCH continues its strong track record of operational excellence and energy efficiency. In 2016, Keppel DC Singapore 1 and 2 obtained the ISO 50001 Energy Management System certification. Keppel DC Singapore 2 and 3 successfully obtained the ISO 27001 Information Security Management System certificate as part of efforts to strengthen internal control of information technology and security matters. KDCH's high renewal rate of over 90% for colocation customers affirms the enduring relationships it has with customers and its excellent service standards.

### Investments

In July 2016, we completed a significant restructuring exercise to consolidate our interests in the Group's asset management business under Keppel Capital. This includes 100% interests in Keppel REIT Management, Alpha and Keppel Infrastructure Fund Management, as well as a 50% interest in Keppel DC REIT Management.

As a larger and integrated fund management platform, Keppel Capital

had total assets under management of approximately \$25 billion in real estate, infrastructure and data centre assets as at end-2016.

Following the restructuring, Keppel Capital launched two new private equity funds – the Alpha DC Fund and the Alpha Asia Macro Trends Fund III – which secured initial commitments of US\$410 million out of a combined target size of US\$1.5 billion.

### Fostering Innovation

Keppel continues to embrace technology to maximise our value proposition. In 2016, Keppel Land partnered local technology firm Philip Tang & Sons to introduce Habitap, Asia's first fully integrated smart home management system at Keppel Land's luxury waterfront development, Corals at Keppel Bay.

Keppel Land also collaborated with leading visualisation firm VMW Group to launch its new Virtual Reality (VR) show suites at its development, Highline Residences. Using state-of-the-art Oculus Rift technology, the VR platform provides visitors with an immersive 360-degree virtual experience of the show suites and key landmarks in the precinct.

To tap into the fast growing e-commerce sector, Keppel Logistics acquired a 59.6% stake in Courex, a local

Keppel Infrastructure was selected by PUB, Singapore's national water agency, to Design, Build, Own and Operate Singapore's fourth desalination plant. The 25-year water purchase agreement was signed by Ong Tiong Guan (second from left), CEO of Keppel Infrastructure, and Ng Joo Hee (second from right), Chief Executive of PUB, and witnessed by Loh Chin Hua (extreme left), CEO of Keppel Corporation, and Tan Gee Paw (extreme right), then-Chairman of PUB.



e-commerce fulfilment company, to build complementary capabilities and improve urban connectivity. This is part of Keppel Logistics' broader strategy to evolve into an asset-light service provider in urban logistics with a focus on connectivity and omni-channel distribution.

Since the launch of the Keppel Innovation Convention in 2015, more Group-wide initiatives have been implemented to instil a culture of innovation among employees.

In 2016, the *InnovateKeppel* catalyst team, comprising representatives from across our businesses, was formed to coordinate and promote innovation efforts.

Keppel Young Leaders, a programme that seeks to groom high potential employees across the Group, also held its inaugural hackathon in 2016 where participants devised innovative solutions to address workplace challenges.

#### **Innovation Through Partnerships**

As part of its efforts to advance technology and innovation, Keppel O&M partners leading industry players, government agencies and academic institutions to develop customised market-relevant solutions.

In 2016, KOMtech partnered the Lloyd's Register Global Technology Centre in

Singapore to improve the safety and performance of semisubmersible designs.

KOMtech also partnered American Bureau of Shipping's (ABS) Singapore Innovation and Research Center to increase fuel efficiency by optimising moonpool size and shape to minimise hull resistance. Together with ABS, academia, and research agencies, KOMtech is also exploring ways to re-purpose its offshore technology and solutions to capture opportunities in the non-drilling sector.

The Keppel-National University of Singapore (NUS) Corporate Laboratory, which was set up in 2013, pursues three major research thrusts to address future challenges in the offshore industry: Future Systems, Future Yards and Future Resources. Under the three thrusts, the work of this synergistic industry-university partnership covers four themes: deepwater technology, arctic technology, productivity enhancements for yard operations and Deepsea Seabed Nodule Harvesting.

The Corporate Laboratory comprises over 100 personnel, including KOMtech researchers as well as professors and doctorate students from NUS. In December 2016, the Corporate Laboratory held its inaugural Governance Board meeting. The meeting was chaired by

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**Keppel continues to invest prudently in R&D and embrace technology to maximise our value proposition.**



*Visitors to the Highline Residences sales gallery can enjoy an immersive virtual experience using the Oculus Rift VR headset.*

## Product Excellence

**We actively seek our customers' feedback and suggestions to help us better understand their needs and translate them to improvements in our products and services.**

Loh Chin Hua, CEO of Keppel Corporation, and Professor Tan Chorh Chuan, President of NUS, to set the strategic direction for the Corporate Laboratory's Steering Committee, which comprises Keppel O&M senior management and NUS professors.

The results of the Corporate Laboratory's research on deepwater and arctic technology, which include research on semisubmersible hull optimisation and ice-structure interactions respectively, will be introduced in the design and construction of Keppel O&M's semisubmersible and arctic offshore structures.

The Corporate Laboratory's research on Deepsea Nodule Harvesting has furthered Keppel O&M's core competencies in deep-water exploration survey techniques for the establishment of environmental baselines.

In 2015, Ocean Mineral Singapore, a JV between Keppel and Lockheed Martin's subsidiary – UK Seabed Resources, was granted concession for the exploration of polymetallic nodules at a 58,000 square kilometres site at the Clarion-Clipperton Zone in the East Pacific Ocean. The research outcomes from this expedition contributed to the establishment of environmental baselines in the areas explored and will guide the development of environmentally benign technologies for deep-sea mining.

### Customer Health & Safety

The health and safety of our customers in the provision and use of our products and services are of utmost importance to us.

We exercise due care and diligence in the design, construction, and operation of our products and services to ensure that they do not pose hazards to customers.

We adhere to policies, procedures and guidelines on health and safety to ensure that they are not compromised in any way. Health and safety impacts are assessed for improvement in all our significant product and service categories, and throughout products' life cycles.

We consider proper design, handling, storage and disposal of materials as early as the planning stage and review product operation and service performances for improvements in customers' health and safety.

Keppel Land has adopted the Guidelines on Design for Safety in Buildings and Structure for all its new projects in Singapore since 2008, in line with Singapore's Workplace Safety and Health Council's Design for Safety Regulations implemented on 1 August 2016. The guidelines require safety and health risks to be incorporated into the early conceptual and planning phases of a project, enabling designers

*KDCH is committed to uphold high security standards and continually improves its security systems.*





**GRI 102-43**

and consultants to reduce these risks through good design and effective project planning.

**Customer Engagement**

We actively seek our customers' feedback and suggestions to help us understand their needs, so that we are able to translate such feedback into improvements in our products and services.

Every four months, Keppel FELS conducts surveys with customers using questionnaires and face-to-face interviews. On a scale of 1 to 6, the company's overall average score improved from 4.8 in 2015 to 5.1 in 2016, which is in the 'good' to 'excellent' range. This improvement resulted from more consistent engagement with clients and the sharing of best practice across the organisation. Overseas, Keppel Verolme, Keppel AmFELS and BrasFELS conducted similar customer surveys with positive results.

Keppel Shipyard received an improved overall score of 5.7 out of 6 for customer satisfaction feedback, up from 5.6 in 2015. Prior to project commencement, Keppel Shipyard ensures alignment in expectations between the project teams and clients through client relations meetings. Keppel Shipyard also conducts post-project reviews to identify key areas of improvement.

Based on feedback forms received from customers, Keppel Singmarine's average rating decreased slightly from a 96% rating of 'good' or 'better' to a 94% rating. To improve ratings, Keppel Singmarine organises weekly meetings with customers' project teams to provide updates and address any issues at an early stage.

Keppel Land's Customer Focus and Property Management teams foster and sustain long-term customer relationships. Feedback from homeowners and tenants is taken into consideration in the company's reviews of upcoming projects and existing developments.

In 2016, Keppel Land conducted service quality surveys for 18 completed projects. Over 95% of the respondents indicated that they were satisfied with the services rendered in the management and operations of the developments. This is an improvement from 94% the year before.

At Keppel Logistics, customer satisfaction improved, with 94% of its customers rating its services as 'good' or 'better' compared to 92% in 2015.

City Gas, a unit of Keppel Infrastructure Trust, has a large customer base of more than 780,000 residential, commercial and industrial customers in Singapore.

City Gas engages a third-party consultancy to conduct customer service audits for its residential and commercial customers. The customer service audit for residential customers is conducted through phone interviews, and for commercial customers, it is carried out in person.

City Gas scored an average overall score of 3.3 out of 4 in 2016, an improvement from its average overall score of 3.1 in 2015.

**Compliance**

Keppel subscribes to best practices and complies with all applicable legislations and requirements.

Keppel's business units abide by the Singapore Code of Advertising Practice by the Advertising Standards Authority of Singapore.

Keppel is not aware of any violation of laws, regulations and voluntary codes pertaining to the provision, use, health and safety of our products and services in 2016.



*Keppel Logistics will continue to harness technology to deliver quality urban logistics services to its customers.*

## Product Excellence

### Special Focus

## Shaping Singapore's Skyline

Keppel Land continues to contribute to shaping Singapore's skyline with iconic buildings, including Corals at Keppel Bay, completed in 2016.

Situated on the southern coast of Singapore, Corals at Keppel Bay is Keppel Land's and world-renowned architect Daniel Libeskind's second collaboration following the iconic Reflections at Keppel Bay. Corals and Reflections at Keppel Bay are the only two residential developments in Asia designed by Daniel Libeskind.

Corals at Keppel Bay comprises 11 five- to 10- storey buildings thoughtfully arranged in a necklace-like composition. Its 366 luxurious waterfront homes come in 1- to 4-bedroom configurations ranging from 600 square feet (sf) to 3,000 sf as well as penthouse units spanning 5,000 sf to 8,000 sf. Each unit is designed to provide an excellent layout with spacious rooms and expansive views of the waterfront, lush landscape, and the historic King's Dock situated alongside the development.

Residents can enjoy the ultimate smart-living experience through the fully-integrated Corals at Keppel Bay Habitatap smart home mobile

application, in addition to a suite of concierge and lifestyle services via the Laureate programme, exclusive to Keppel Bay. Residents also receive a complimentary 10-year membership and five-year subscription at the precinct's exclusive waterfront playground, Marina at Keppel Bay.

Over 50% of the development is covered by lush greenery and water features, including an expansive garden at its centre, surrounded by facilities such as an Olympic-length swimming pool and clubhouse with a landscaped roof, rainwater filtration and recycling system as well as double-glazed glass panels. The waters surrounding Corals at Keppel Bay are home to a thriving kaleidoscope of coral reefs and marine life.

For its sustainable features, Corals at Keppel Bay has achieved the Building and Construction Authority's Green Mark Gold<sup>PLUS</sup> Award as well as the Landscape Excellence Assessment Framework Award by Singapore's National Parks Board.

**Keppel is a leading developer of iconic premium waterfront developments.**

*Corals at Keppel Bay offers residents panoramic views of the sea and the lush central garden.*



## Marvellous Megastructures

Projects by Keppel were recognised among Singapore's Top 50 Engineering Feats, reinforcing the Company's position as a global leader in its industries.

Keppel's semisubmersible DSS™ Series rigs, KFELS N Class rigs and Arctic icebreakers, as well as the Keppel Bay waterfront precinct have been recognised as Singapore's Top 50 Engineering Feats in a competition organised by The Institution of Engineers Singapore (IES). The competition recognises projects deemed to have made significant economic, societal or infrastructural impact to Singapore.

Keppel was awarded for its achievements at the IES Golden Jubilee Dinner graced by Prime Minister of Singapore Lee Hsien Loong on 1 July 2016.

### Keppel's Winning Projects DSS™ Series semisubmersibles

The DSS™ Series semisubmersibles are among the world's most technically advanced deepwater drilling rigs. Keppel Offshore & Marine is the first in the world to develop these proprietary designs for advanced deepwater drilling.

### Arctic Icebreakers

Keppel Singmarine is the first yard in the tropics of Asia to successfully build and deliver icebreakers designed for the Arctic region.

The two icebreakers, Varandey and Toboy, are designed to cut through solid ice of over 1.7 metres thick and operate in extreme temperatures of as low as -45 degrees Celsius.

### KFELS N Class Jackup

The KFELS N Class jackup rigs can handle ultra-harsh environments in water depths ranging from 400 to 500 feet, which is 40% deeper than what traditional units can reach in benign waters. The N Class series was conceptualised as an innovative and cost effective jackup solution for the Norwegian sector of the North Sea, one of the world's harshest operating environments for offshore exploration and production.

### Keppel Bay

The vibrant waterfront precinct of Keppel Bay is a marriage of modern architecture and rich heritage. The precinct comprises FIABCI award-winning condominiums Reflections and Caribbean at Keppel Bay, luxury residential development Corals at Keppel Bay, as well as Keppel Bay Tower and Marina at Keppel Bay, the choice marina for luxury superyachts.



The winning projects, including the DSS™ Series semisubmersible (pictured), are a testament to Keppel's position as a global leader in the development, design and construction of specialised vessels and offshore rigs.

# Safety & Health

## Performance Overview

### What we said in 2016

Refine strategies to prevent fatalities and reduce injuries.

Continue to review safety standards, incident investigation processes and management of High Impact Risk Activities (HIRA) to align with global standards.

Continue to develop capabilities of senior managers and line managers to equip them with the skillsets to become more effective safety leaders.

### What we did in 2016

Developed a Zero Fatality roadmap based on an analysis of previous incidents and an evaluation of existing initiatives.

Conducted Safety Leadership coaching programmes to strengthen the capabilities and leadership skills of frontline managers.

Reviewed incident investigation techniques and HIRA practices across the Group and initiated improvements and alignment of processes.

### What we plan to do

Focus efforts on executing our Zero Fatality roadmap.

Conduct training on standardised incident investigation techniques across the Group.

Leverage technology to drive improvements in safety performance.



The well-being and safety of all our stakeholders are among our top priorities.

**Investment**

**\$37m**

Invested to improve safety systems and training.

**Awards**

**35 Awards**

Conferred on the Keppel Group at the Workplace Safety and Health Awards by Singapore's Ministry of Manpower and WSH Council in 2016.

**Safety is one of our core values. We are committed to provide a safe and healthy workplace for all our stakeholders.**

**Overview**

Safety is a core value at Keppel, an integral part of our business, and a key focus area for our Board of Directors and senior management. We are committed to provide a safe and healthy workplace for all our stakeholders.

Processes and systems are in place to identify, mitigate and report risks and communicate best practices across the Group, and we work with our contractors and subcontractors to ensure that they understand our requirements and expectations.

**Management Approach**

We focus on strengthening our frameworks and management systems as well as promoting a culture of safety ownership across our operations.

**Strategy & Policy**

Our approach to safety management is guided by the Keppel Group's Safety and Health strategy, which is focused on four aspects across our global operations – having an integrated framework, implementing effective management systems, promoting ownership and enhancing partnerships across our operations.

In 2016, the Group introduced the Zero Fatality roadmap which outlines

actionable items to prevent incident recurrence, align systems and processes, strengthen compliance to procedures and bolster the capabilities of frontline managers. The roadmap is based on an analysis of previous incidences and an evaluation of current initiatives.

The effectiveness of our management approach is reviewed regularly. During the annual Keppel Health, Safety and Environment (HSE) Roundtable, senior management from our businesses share insights, best practices and exchange ideas to improve Keppel's safety performance. The action plan generated during the session is incorporated into the Group's safety roadmap and strategies.

All employees and third-party suppliers and contractors are expected to abide by the Keppel Corporation HSE Policy which places the highest priority on the health and safety of people and the protection of assets and the environment.

**Best Practice**

Our safety management system is routinely audited by independent consultants as well as internal audit teams. For example, Keppel Offshore & Marine's (Keppel O&M) Cross Business Unit Audit ensures that policies and management systems are adhered to and that practices across our global yards are aligned.



*We aim to instil a culture of safety where everyone goes home safe.*

## Safety & Health

**We focus on strengthening safety frameworks and management systems as well as promoting a culture of safety ownership.**

Our business units also strive to achieve HSE certifications in line with global best practices.

Keppel FELS, Keppel Shipyard and Keppel Singmarine are certified to be compliant with the SS 506 Singapore Standard for Occupational Safety & Health Management System, while our yards in Azerbaijan, Brazil, China, Qatar, the Netherlands, United Arab Emirates and the United States are certified to meet both the internationally-recognised OHSAS 18001 Occupational Safety & Health Management System and ISO 14001 Environmental Management System.

Keppel Land's Singapore, China and Vietnam units as well as Keppel Infrastructure and its key subsidiaries, including Keppel Seghers Engineering

and Keppel DHCS, have their management systems certified to OHSAS 18001 and ISO 14001.

In addition to OHSAS 18001 and ISO 14001, Keppel Logistics is certified to be compliant with the SS 590 Hazard Analysis and Critical Control Point (HACCP)-based Food Safety Management System. HACCP addresses food safety through the assessment of hazards and the establishment of controls that focus on prevention. Keppel DC Singapore 1, 2 and 3 also received certification for SS 507 Singapore Standard for Information and Communications Technology Disaster Recovery Services.

### Board & Management Oversight

Keppel Corporation is the first publicly-listed company in Singapore to establish a Board Safety Committee (BSC) in 2006.

### Group HSE Structure



*Keppel Corporation's BSC visited the Domestic Solid Waste Management Centre and Doha North Sewage Treatment Works, both operated by Keppel Infrastructure, in Qatar.*

Chaired by Tan Ek Kia, a non-executive and independent director of Keppel Corporation, the BSC adopts a hands-on approach in setting the strategic direction to ensure that consistently high safety standards are maintained across the Group.

The BSC leads efforts to implement initiatives and improve performance with the support of the Inter-Strategic Business Unit Safety Committee, which comprises representatives from all our business units. The Committee is chaired by R K Jaggi, General Manager of Group HSE, Keppel Corporation.

Keppel Corporation's BSC as well as the BSCs and senior management of the various business units conduct regular site visits to engage operational staff and understand the challenges faced on the ground.

In Singapore, Keppel Land's BSC conducted a site visit to the Highline Residences worksite. Keppel Infrastructure's BSC visited the Keppel Merlimau Cogen Plant, Senoko Waste-to-Energy (WTE) Plant and the Keppel DHCS plant at Mediapolis@one-north to reinforce the importance of workplace safety. Keppel Corporation and Keppel Telecommunications & Transportation (Keppel T&T) BSCs visited the Tampines Logistics Hub, while Keppel T&T Chief Executive Officer (CEO) visited the Keppel DC Singapore 4 worksite.

In China, Keppel Corporation, Keppel O&M and Keppel Land BSCs conducted joint visits to Keppel Nantong Shipyard, Hill Crest Villa Phase 1, Sheshan Riviera Phase 1, Waterfront Residences Phase 1 and Park Avenue Heights.

## The Keppel Safety & Health Strategy

### Vision

A safe and healthy workplace where everyone goes home safe every day

### Mission

To execute our business activities profitably, safely and responsibly, placing the highest priority on the safety and health of all stakeholders

### Strategic Thrusts

#### Framework

Integrated safety framework for businesses worldwide, with common goals across the Keppel Group

#### System

Adopting best practices, systems, standards and processes

#### Ownership

Strong safety ownership at all levels

#### Partnerships

Engagement across all stakeholder groups

### Outcomes

- Strong safety culture
- Safety – an integral part of business
- Reduction in incidents



## Health, Safety and Environment (HSE) Policy

It is the policy of Keppel Corporation Ltd (KCL) to place the highest priority on the health and safety of people and the protection of assets and the environment, in the pursuit of its business objectives and activities.

This policy is founded on the following principles:

- HSE is a core value and an integral part of business
- Every HSE incident is preventable
- HSE is a line responsibility
- A healthy worker is a safer worker
- Every employee has a personal responsibility to work safely and follow safe work practices and procedures
- Third parties who work on our premises are to follow this policy

To fulfill this policy, the Group is committed to:

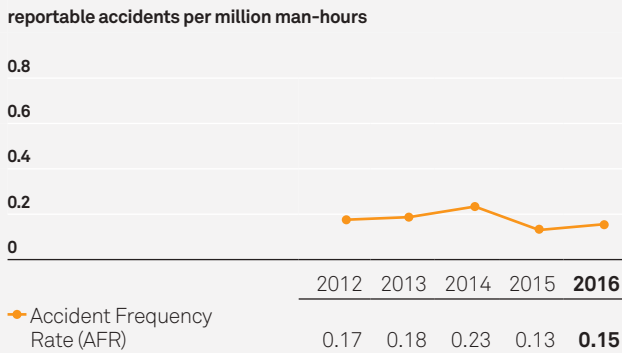
- Make adequate resources available
- Promote a strong HSE culture
- Adopt this policy in all its business premises where it has a controlling influence
- Set improvement targets and monitor progress through performance management, audits and periodic reviews
- Comply with the requirements of statutory legislation of the countries in which it operates as a minimum
- Promote wellbeing and maintain a safe and healthy working environment for all stakeholders
- Provide adequate HSE training and ensure workforce is competent
- Adopt a systematic approach in HSE management system that enables continuous performance improvement
- Report and investigate all accidents, incidents and near misses and ensure lessons learned are disseminated to prevent recurrence

DR LEE BOON YANG  
Chairman  
Keppel Corporation Limited  
Date: 16 April 2015

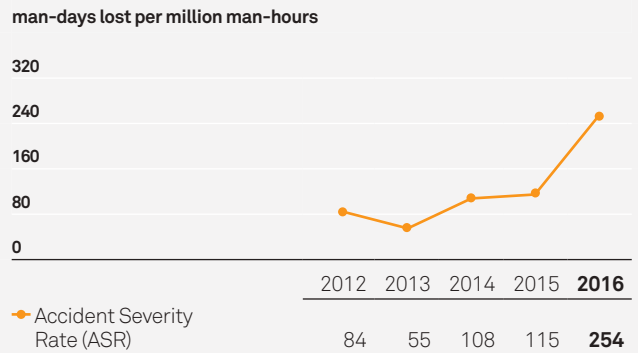
MR LOH CHIN HUA  
Chief Executive Officer  
Keppel Corporation Limited  
Date: 16 April 2015

## Safety & Health

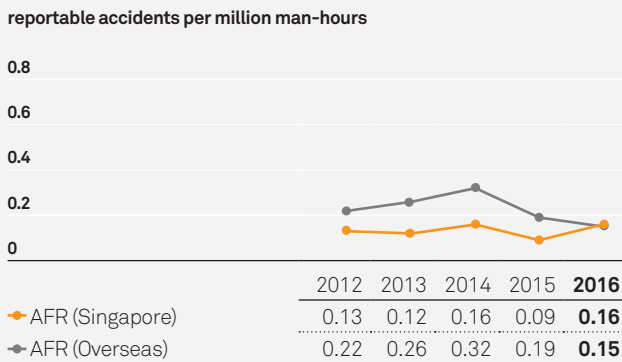
**Keppel Group (Global)**  
**Accident Frequency Rate (2012 – 2016)**



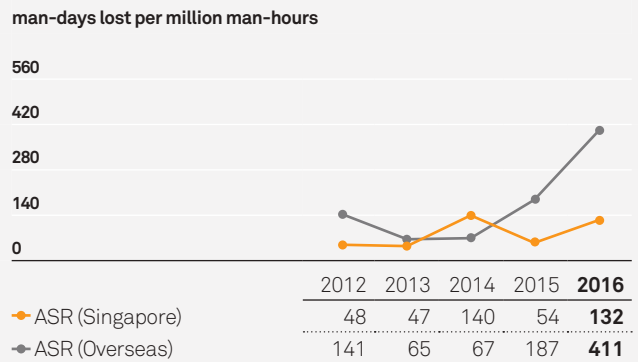
**Keppel Group (Global)**  
**Accident Severity Rate (2012 – 2016)**



**Keppel Group (Singapore & Overseas)**  
**Accident Frequency Rate (2012 – 2016)**



**Keppel Group (Singapore & Overseas)**  
**Accident Severity Rate (2012 – 2016)**



In Qatar, Keppel Corporation, Keppel O&M and Keppel Infrastructure BSCs visited Nakilat-Keppel O&M, the Doha North Sewage Treatment Works and the Domestic Solid Waste Management Centre.

In Vietnam, Keppel Land BSC visited Estella Heights and Saigon Centre.

### Performance

Despite our best efforts, our Accident Severity Rate (ASR) increased in 2016. Our ASR in 2016 was 254 man-days lost per million man-hours compared to 115 the year before, as we suffered seven fatalities globally in 2016. We are deeply saddened by the loss of our colleagues and have thoroughly investigated the causes, which were related to working at heights, high-pressure testing and diving activities. We determined the contributing factors and identified steps to prevent similar incidents in the future. Lessons learnt were shared across the Group.

Our Accident Frequency Rate (AFR) for 2016 increased slightly to 0.15 accidents

per million man-hours from 0.13 the year before. As the members of our workforce who are exposed to health and safety risks are largely male, the presentation of data according to gender was assessed to be immaterial.

The operations and maintenance operator for Keppel Infrastructure Trust's Senoko WTE Plant was issued a partial Stop Work Order and a fine of \$6,000 by Singapore's Ministry of Manpower (MOM) for a fatal incident.

A contractor at Keppel DC Singapore 4's construction site was issued a Stop Work Order by MOM following a site inspection in 2016. The order was lifted shortly after, when the contractor implemented additional measures to enhance workplace safety.

### Recognition

The Group was conferred 35 Workplace Safety and Health (WSH) Awards in 2016 by MOM and Singapore's WSH Council. This is the largest number of awards won by a single organisation in Singapore. The awards recognise WSH excellence.



Of the 35 awards, Keppel O&M bagged 27 awards under the Safety and Health Award Recognition for Projects (SHARP) category. Keppel Singmarine was conferred the WSH Innovation Award for developing a Mighty Hammer Arrestor, which prevents the dislodging of steel hammer heads from handles during use.

For its robust WSH management systems, Keppel Singmarine clinched the WSH Performance (Silver) Award for the 10th consecutive year.

Kenny Foong Kum Seng, an Outfitting Supervisor at Keppel FELS, was awarded an individual WSH Award for Supervisors for improving the safety and health performance of his team.

Keppel Nantong Shipyard received an award for being a model enterprise in occupational health and safety. The award recognises the shipyard's efforts in the development and effective implementation of an occupational health and safety management system and the continuous strengthening of workplace safety training. Keppel Nantong is the first shipyard in the Gangzha district of Nantong to set up a safety-focused training centre.

Keppel REIT Management, a wholly-owned subsidiary of Keppel Capital, was conferred the bizSAFE Partner Award at the 2016 bizSAFE Convention. bizSAFE is a five-step programme by the WSH Council that assists companies in building up their WSH capabilities.

Keppel Logistics was conferred the National Trades Union Congress' U SAFE SPARKS Award for its efforts and commitment to workplace safety and health. Keppel Logistics also won the Road Safety Award for Companies with Heavy Goods Vehicle Fleet by the Singapore Road Safety Council for its active promotion of road safety.

### Building Skillsets

We empower and train our stakeholders to ensure that all personnel are kept updated on safety measures and best practices.

In 2016, we invested approximately \$37 million in enhancing infrastructure, upgrading systems and building knowledge and skillsets across the Group.

Our commitment to innovation extends to improving the safety of work processes. At the 10th annual Keppel Group Safety Convention, 53 Safety Innovation Projects were submitted, paving the way for solutions to be further developed into actual products. Some of the entries went on to compete at both industry and national levels and have since garnered awards (see page 69).

The Keppel Safety Training Centre at Keppel Shipyard in Singapore offers a complete range of safety training and certification courses in both trade-specific and broad-based skills for all levels of the workforce. The Centre is equipped with classrooms, an e-learning zone, and a hall with multimedia and

**We encourage our employees to upgrade their skillsets and keep updated on safety measures and best practices.**



Muhammad Ahnaf Bin Abdul Manaf's (centre) from Keppel Singmarine was recognised for his efforts to upgrade his skills at the NTUC May Day Model Partnership Awards.

## Safety & Health

**We support initiatives that raise safety standards and work closely with our contractors to maintain high safety standards throughout our workforce.**

interactive training stations. It also features a life-size replica of the mid-section of a tanker with various technical training areas. Core competency and safety leadership development programmes, as well as Workforce Skills Qualifications courses certified by the Singapore Workforce Development Agency, are some of the key training modules conducted by qualified, full-time instructors at the Centre.

Keppel Land's Safety Awareness Centres in Ho Chi Minh City, Vietnam, and Johor Bahru, Malaysia, provide mandatory training for contractors' employees and foster a culture of safety across Keppel Land's supply chain. In 2016, new Safety Awareness Centres were opened in Jakarta, Indonesia, and Tianjin, China, to ensure a trained global workforce.

Keppel Land's Behavioural Management of Safety programme is in place for projects in Singapore and China. The programme uses behavioural strategies to improve work processes.

To promote safer driving, Keppel Logistics organised Defensive Driving courses for its drivers.

### Recognising Safe Behaviour

The Keppel Group Safety Convention 2016 brought over 900 employees, partners, contractors and subcontractors together to reaffirm their collective commitment to uphold the Group's core value of safety. The annual event also saw the continuation of the Keppel Group Safety Awards, which recognises employees who have gone the extra mile to foster safe and healthy work environments.

Themed 'Harnessing Strengths towards HSE Excellence', the event included a sharing session by six employees from across the Group, who spoke on their roles in contributing towards enhancing safety at their work sites.

### Enhancing Communication

Keppel's five Key Safety Principles are widely publicised so as to ingrain safety consciousness among all stakeholders.

The Group HSE Alerts system was established to better disseminate lessons learnt globally and ensure that preventive measures are taken

**5 KEY SAFETY PRINCIPLES**

1. Every incident is preventable
2. Health, Safety & Environment (HSE) is an integral part of our business
3. HSE is a line responsibility
4. Everyone is empowered to stop any unsafe work
5. A strong safety culture is achieved through teamwork

**Keppel Group**

Safety Starts With Me  
Together We Care

*Keppel's five Key Safety Principles are widely publicised so as to ingrain safety consciousness among all stakeholders.*

promptly. Major incidents are also shared and discussed at quarterly BSC meetings.

Keppel O&M's HSE team unveiled its Life Saving Rules in 2016 to provide employees, and frontline workers in particular, with guidance on preventive measures they can take to keep themselves safe.

During the year, Keppel FELS organised a HSE campaign themed 'Intervene! Don't look away!', to urge employees and contractors to intervene when they observe any unsafe behaviour at the yards. Keppel Singmarine organised a HSE Day 2016 with the theme 'Protect Your Hands and Fingers at Work', to reinforce the fundamentals of safe manual work. Keppel Shipyard conducted a 'Prevention of Slip and Fall' campaign to reinforce the importance of safe work practices.

Keppel Land's employees, consultants and contractors came together to share best practices at the company's WSH Recognition Event 2016, which awarded the efforts of project teams and contractors who have contributed to safety excellence. Separately, Keppel Land China organised a Contractors Safety Convention to reiterate the importance of safe work practices.

Keppel Infrastructure held its third annual HSE Roadshow where employees were briefed on the company's HSE

performance, targets, action plan and lessons. The company also held its inaugural Contractor HSE Forum to discuss safety issues and best practices.

Keppel Housing, which manages the accommodation of our yards' direct workers, hosted a HSE Roadshow to empower residents with safety and health knowledge. The roadshow was supported by several government agencies, including MOM, the WSH Council and the Health Promotion Board (HPB).

### Partnerships Memberships in Associations

We support national and industry-related initiatives to raise safety standards. Members of Keppel's management team sit on various committees of the WSH Council and related industry associations such as the Association of Singapore Marine Industries (ASMI).

Chris Ong, Acting CEO of Keppel O&M and Managing Director of Keppel FELS; Chor How Jat, Managing Director of Keppel Shipyard; and Abu Bakar Bin Mohd Nor, Managing Director of Keppel Singmarine, are members of the WSH Council (Marine Industries) Committee.

Yong Chee Min, Director of HSE & Special Projects at Keppel O&M, is the Chairman of the ASMI WSH Committee and a member of both the WSH National Work at Heights Safety Taskforce and WSH Council (Marine Industries) Committee.



Keppel FELS' 20th HSE Excellence Promotion Campaign focused on empowering everyone to intervene actively in any unsafe situation.

## Safety & Health

Keppel's HSE professionals also contribute towards upholding the industry's safety standards. Derek Sim, Senior HSE Manager of Keppel FELs, and Mohd Aliffi Ismail, Assistant General Manager (HSE) of Keppel Shipyard, represent ASMI and are a part of the Singapore Standards Council's General Engineering and Safety Standards Committee and Technical Committee on WSH respectively. Lim Ping, Manager for WSH at Keppel Land, is Vice Chairman of the Institution of Occupational Safety and Health (Singapore Branch).

### Influencing our Supply Chain

We work closely with all stakeholders, including our contractors and subcontractors, to maintain high safety standards throughout our workforce. Our subcontract workers undergo the same safety training as direct employees.

To raise industry standards, we work closely with MOM and the WSH Council to roll out safety initiatives and encourage our subcontractors to equip themselves with relevant safety certifications from the WSH Council. The Keppel Group has also been a regular sponsor of annual national safety events, including the 2016 editions of the WSH Conference, National WSH Campaign and bizSAFE Convention.

At Keppel FELs, members of the Subcontractors Executive Council Safety Committee, comprising representatives of different trade sections including HSE, meet regularly to discuss safety initiatives and share best practices.

As bizSAFE partners, Keppel FELs, Keppel Shipyard and Keppel Singmarine actively encourage contractors to progress

through the levels of the bizSAFE programme. Since 2013, Keppel Shipyard has imposed a bizSAFE Level 4 certification requirement for resident contractors before they are able to undertake work at the yard.

As a bizSAFE Mentor, Keppel Land encourages contractors to develop and implement safety initiatives at their workplaces. Prior to their appointment, Keppel Land's main contractors must be confirmed as bizSAFE partners, ensuring that their subcontractors meet the standards set by the WSH Council.

Keppel Seghers was recognised for its efforts in encouraging HSE excellence and was awarded bizSAFE Partner status by the WSH Council in 2016.

### Industry Sharing

Keppel O&M actively participates in HSE-related seminars and forums to share its experience and standards with stakeholders.

In 2016, Yong Chee Min, Director of HSE & Special Projects at Keppel O&M, hosted a delegation from the Singapore Examinations and Assessment Board who wanted to learn more about Keppel O&M's approach to safety innovations.

Mohd Aliffi Ismail, Assistant General Manager (HSE) of Keppel Shipyard, also shared insights from the marine industry's Vessel Safety Co-ordination Committee Meeting with the WSH (Construction & Landscape) Committee.

Peter Jones, General Manager of WSH at Keppel Land presented on the Cooperation

& Coordination Aspects of Design for Safety at the Real Estate Developers' Association of Singapore Design for Safety Seminar 2016.

A group of Keppel HSE professionals visited SATS at Singapore Changi Airport to learn about how SATS evaluates the risk profile of employees with the aim of reducing incidents on the ground.

### Health & Wellness

Exercise programmes and healthy-living campaigns across the Keppel Group encourage employees to live active, balanced lifestyles.

Keppel O&M's HSE personnel organise dormitory visits on a regular basis to reach out to workers on health and safety matters. Keppel Shipyard's Well-Being and Support Centre is equipped with facilities such as a pharmacy, counselling rooms and designated rest areas, and offers holistic health and medical services. The yard is developing a Keppel Wellness Gallery to educate and empower staff, customers and visitors with healthcare knowledge. To provide workers with a conducive environment to rest during breaks, Keppel Shipyard built three 4-storey rest areas. Each rest area accommodates up to 2,000 workers. A fourth rest area is being planned.

Keppel T&T signed the HPB's Helping Employees Achieve Life-time Health Charter, pledging to develop, execute and enhance an integrated Workplace Health Promotion programme. Staff also benefitted from lunchtime talks on health, mental wellness and stress management.

*The Keppel Wellness Gallery aims to educate workers on the importance of proper nutrition, an active lifestyle and good mental wellness.*



## Promoting Safety Innovations

Across the Keppel Group, we continue to develop innovative solutions to improve work processes and enhance safety.

Promoting a strong safety culture is a key tenet of Keppel's safety strategy. In developing innovative and effective safety solutions, we encourage ground up, employee-led initiatives, so as to cultivate a sense of ownership at all levels.

In 2016, a total of 53 Safety Innovation Teams submitted Safety Innovation Projects – innovative and practical solutions to address challenges on the ground. Three Platinum, five Gold, 12 Silver and 15 Bronze Awards were presented to the winning teams at the annual Keppel Group Safety Convention.

The top three innovations were:

- To reduce risks, a team from Keppel Infrastructure developed a mechanical spring-loaded scraper to clean stop gate guides, thereby eliminating the need for divers or expensive cleaning equipment. This is estimated to have achieved an estimated cost saving of \$80,000 per annum on third-party services.
- To eliminate risks associated with working at heights, a team from Keppel FELS designed and fabricated a set of rollers which allow raw water pipes to be installed horizontally onto the legs of jackup rigs. This enables the installation to be done at ground-level instead of requiring the workers to climb up scaffoldings. The initiative has resulted in savings of \$5,000 per water piping installation project. Productivity has also improved, with 64 man-hours required per water piping installation as compared to 113 man-hours.
- To enhance the safety of workers, a team from Keppel Shipyard developed an easy-to-assemble modular rail structure and trolley to remove thrusters from the ship's hull for repair. The innovation has eliminated the need for workers to enter the tunnel for hot work, or to physically move the thruster. This reduces the risk of worker injuries from such work.

**We encourage employee-driven safety projects to cultivate a sense of ownership at all levels.**



*The winning Safety Innovation Teams showcased their projects at the annual Keppel Group Safety Convention, which was attended by Sam Tan, Minister of State, Prime Minister's Office, Ministry of Manpower and Ministry of Foreign Affairs (second from right).*

# Labour Practices & Human Rights

## Performance Overview

### What we said in 2016

Raise the level of employee engagement.

Hold more regular communication sessions with employees.

### What we did in 2016

Conducted the Keppel Global Employee Engagement Pulse Survey.

Engaged employees through the annual Global Keppelites Forum and quarterly town hall meetings.

Our business units organised more dialogue sessions to improve management-staff communication.

### What we plan to do

Continue to develop and engage our workforce.

Implement initiatives to achieve our long-term goal of improving collaboration and workplace innovation.



*Our diverse and inclusive workforce with a broad range of backgrounds, perspectives, and experiences drives innovation and makes our business more resilient.*

#### Employee Engagement

87%

Of employees surveyed indicated that they would “go beyond the norm” to contribute to Keppel’s success.

#### Local Hires

60.3%

Of senior management are hired from local communities.

## We adhere to fair employment practices, uphold human rights principles, and empower our workforce with opportunities for learning and development.

### Overview

Our people are our most valuable asset. We believe in investing in our workforce and developing our employees to their fullest potential.

Our total workforce, comprising full and part-time permanent employees and excluding our contractor workforce, was 26,457 in more than 20 countries. The data reported in this section takes into account significant subsidiaries and associated companies managed by Keppel.

Faced with a prolonged and challenging external environment, Keppel Offshore & Marine (Keppel O&M) has been taking the necessary steps to ensure that operations are sustainable by reducing our direct staff strength and subcontractor workforce in Singapore and overseas in line with our operational requirements.

Where possible, we continue to explore redeploying manpower to other business units within Keppel where additional resources are required.

The age profile of our workforce is largely young, with 30.1% of employees under the age of 30 and 36.9% between the ages of 30 and 39. During the year, 2,846 people were hired. Overall voluntary turnover rate was 15.2% in Singapore and 12.3% globally,

an increase from 10% and 8.9% in 2015 respectively. This increase is largely due to the headwinds faced in the offshore and marine industry.

### Management Approach

We respect and uphold human rights principles, adhere to fair employment practices, and invest in developing and training our workforce. In doing so, we attract and retain the best talent and grow the capabilities of our people.

### Human Rights

Keppel Corporation and our Group of Companies uphold and respect the fundamental principles set out in the United Nations (UN) Universal Declaration of Human Rights and the International Labour Organisation’s Declaration on Fundamental Principles and Rights at Work. Our approach to human rights is informed and guided by general concepts from the UN Guiding Principles on Business and Human Rights.

We have zero tolerance for unethical labour practices such as child labour, forced labour, slavery and human trafficking in any of our operations. Keppel also supports the elimination of exploitative labour. Our suppliers are expected to comply with the Group’s Supplier Code of Conduct, which holds them accountable to responsible labour practices in their operations.



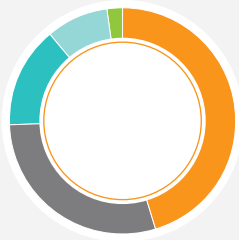
*Our people are our most valuable asset. We aim to attract and retain the best talents and grow the capabilities of our people.*

## Labour Practices & Human Rights

GRI 102-41

### Global Workforce

#### Distribution by Regions



	No. of employees	%
● Singapore	11,972	45.3
● Asia (excluding Singapore)	7,764	29.3
● Americas	3,799	14.4
● Middle East & Africa	2,381	9.0
● Europe	541	2.0
<b>Total</b>	<b>26,457</b>	<b>100.0</b>

#### Distribution by Segment & Gender (%)

	Male	Female
Corporate Office	44.4	55.6
Offshore & Marine	92.2	7.8
Property	54.0	46.0
Infrastructure	76.7	23.3
Investment	30.9	69.1
<b>Overall</b>	<b>84.3</b>	<b>15.7</b>

#### Distribution by Segment & Employment Type (%)

	Permanent	Contract
Corporate Office	96.6	3.4
Offshore & Marine	95.4	4.6
Property	88.8	11.2
Infrastructure	57.0	43.0
Investment	97.4	2.6
<b>Overall</b>	<b>90.8</b>	<b>9.2</b>

#### Distribution by Employment Type & Gender (%)

	Male	Female
Permanent	84.9	15.1
Contract	78.1	21.9
<b>Overall</b>	<b>84.3</b>	<b>15.7</b>

Our commitment to human rights is also supported by our Employee Code of Conduct, which sets the tone in relation to the Group's stance against discrimination on any basis, inclusive of any bias on the basis of ethnicity, gender, religious beliefs, nationality, age or any physical disability. The rules of conduct apply to all employees of Keppel Corporation and its subsidiary companies. Our stance on human rights is articulated in our Corporate Statement on Human Rights which is publicly available online.

Unions are our partners and we place great emphasis on maintaining a harmonious relationship with them. Approximately 37.9% of our global workforce are bargainable employees covered by Collective Agreements (CA).

Guidelines are in place for the appropriate management of grievance cases. For unionised companies, employee grievances are resolved according to the grievance handling protocol spelt out in the respective CA. All registered grievances are investigated and tracked through to final closure. In the case of a grievance, our management and the union will undertake every reasonable effort to resolve the employee's grievance promptly.

Worldwide, there were 19 grievance cases reported in 2016, three of which are pending resolution at the time of the printing of this report. All grievance cases in 2015 have been resolved.

#### Fair Employment Policies & Practices

We adopt fair employment practices and comply with local labour regulations across our global operations and with minimum wage laws, where such laws exist.

In Singapore, Keppel adheres to the practices spelt out by the Tripartite Alliance for Fair and Progressive Employment Practices (TAFEP) and endorses its Employers' Pledge of Fair Employment Practices, which are guided by the following five principles:

1. Recruit and select employees on the basis of merit (such as skills, experience or ability to perform the job), and regardless of age, race, gender, religion, marital status and family responsibilities, or disability.
2. Treat employees fairly and with respect and implement progressive human resource management systems.
3. Provide employees with equal opportunity to be considered for

<sup>1</sup> Locals are defined as citizens or permanent residents of the country in which they work.



training and development based on their strengths and needs to help them achieve their full potential.

4. Reward employees fairly based on their ability, performance, contribution and experience.
5. Comply with the labour laws and abide by the Tripartite Guidelines on Fair Employment Practices.

Keppel subscribes to a pay-for-performance philosophy. We believe this drives ownership of collective goals and leads to a high-performance culture that creates long-term shareholder value.

Opportunities for advancement, promotion, recognition of achievements, compensation, training and other conditions of employment are provided based on merit. Regular performance reviews are conducted for all permanent employees. The process, undertaken jointly by the employee and supervisor, entails the setting of targets and a career developmental roadmap detailing work plans, training and measurable performance targets.

### Diversity & Inclusion

We believe that people should have access to the same opportunities regardless of their ethnicity, religion, gender, marital status or age.

Our hiring policies ensure equal employment opportunities for all. New hires are considered based on individual competencies as well as organisational and job fit. Our employment statistics, reviewed regularly, illustrate the diversity of our workforce. As at 31 December 2016, 15.7% of our employees are female, compared to 12.9% in 2015. We recognise that there are certain sectors in our businesses, such as offshore and marine, which tend to attract larger proportions of male employees, due to the nature of the jobs. Nevertheless, we value diversity and inclusion, and are committed to the principle of equal employment opportunity.

We believe that hiring from local communities' enhances our ability to understand local needs and strengthen our capabilities on the ground. We also develop local talents to assume management positions. Across our business units, 60.3% of senior management and 59.4% of our employees are citizens or permanent residents of the countries in which they work.

### Distribution by Region & Gender (%)

	Male	Female
Singapore	87.6	12.4
Asia (excluding Singapore)	71.6	28.4
Americas	91.4	8.6
Middle East & Africa	96.9	3.1
Europe	86.0	14.0
<b>Overall</b>	<b>84.3</b>	<b>15.7</b>

### Distribution by Segment & Age Group (%)

	< 30 years old	30 to 39 years old	40 to 49 years old	50 years old & above
Corporate Office	14.7	40.9	29.7	14.7
Offshore & Marine	31.5	36.8	18.1	13.6
Property	28.6	37.8	23.5	10.1
Infrastructure	23.8	35.6	24.2	16.4
Investment	18.3	44.0	26.7	11.0
<b>Overall</b>	<b>30.1</b>	<b>36.9</b>	<b>19.6</b>	<b>13.4</b>

### Distribution by Segment & Educational Qualification (%)

	Post-graduate	Bachelor's Degree	Post Secondary/Pre-U/Vocational	Secondary	Primary & below
Corporate Office	13.4	69.8	9.9	6.9	0.0
Offshore & Marine	4.1	16.2	28.6	35.1	16.0
Property	6.0	41.3	30.2	20.2	2.3
Infrastructure	4.5	30.5	36.7	25.2	3.1
Investment	13.1	70.2	12.0	3.7	1.0
<b>Overall</b>	<b>4.5</b>	<b>22.1</b>	<b>29.3</b>	<b>31.6</b>	<b>12.5</b>



*Our hiring policies ensure equal employment opportunities for all. New hires are considered based on individual competencies as well as organisational and job fit.*

## Labour Practices & Human Rights

### Global Workforce

Senior Management<sup>2</sup> Distribution by Region & Local/Non-Local Hires (%)

	Local Hires	Foreigners
Singapore	91.0	9.0
Asia (excluding Singapore)	46.6	53.4
Americas	23.1	76.9
Middle East & Africa	0.0	100.0
Europe	93.7	6.3
<b>Overall</b>	<b>60.3</b>	<b>39.7</b>

Distribution by Region & Local/Non-Local Hires (%)

	Local Hires	Foreigners
Singapore	33.0	67.0
Asia (excluding Singapore)	97.7	2.3
Americas	96.6	3.4
Middle East & Africa	0.3	99.7
Europe	91.5	8.5
<b>Overall</b>	<b>59.4</b>	<b>40.6</b>

New Hires by Segment & Age Group (Executive & Above) (%)

	<30 years old	30 to 39 years old	40 to 49 years old	50 years old & above
Corporate Office	40.9	36.4	22.7	0.0
Offshore & Marine	47.7	33.1	11.9	7.3
Property	26.4	52.9	17.6	3.1
Infrastructure	33.1	41.9	19.4	5.6
Investment	37.0	44.5	18.5	0.0
<b>Overall</b>	<b>33.3</b>	<b>45.5</b>	<b>16.9</b>	<b>4.3</b>

New Hires by Segment & Gender (Executive & Above) (%)

	Male	Female
Corporate Office	50.0	50.0
Offshore & Marine	76.8	23.2
Property	53.1	46.9
Infrastructure	62.9	37.1
Investment	33.3	66.7
<b>Overall</b>	<b>59.3</b>	<b>40.7</b>

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

#### Provision of Benefits

Our employees are provided with a comprehensive range of benefits that may include vacation leave entitlements, medical benefits and group insurance plans. In Singapore, part-time employees are entitled to similar benefits on a pro-rata basis.

Eligible female employees in Singapore are entitled to a maximum of 16 weeks of paid maternity leave, while eligible male employees in Singapore are entitled to a maximum of two weeks of paid paternity leave, in accordance with Singapore Ministry of Manpower's legislation. In 2016, all of our 79 female employees in Singapore who went on maternity leave returned to work.

The Keppel Group adheres to the respective social security contribution or pension plan obligations of the countries in which we operate.

In Singapore, the Central Provident Fund (CPF) is a comprehensive social security savings plan that enables salaried Singapore Citizens and Permanent Residents to set aside funds to work towards a secure retirement. Under the CPF scheme, Keppel and its employees make monthly contributions to the employees' CPF accounts in accordance with the prevailing regulations.

#### Nurturing Human Capital

We encourage and enable employees to develop to their full potential. The overall average training hours per employee for our key operations in Singapore was approximately 29.8 hours. Globally, the overall average training hours per employee was approximately 25.3 hours, with an average of 25.4 hours for females and 25.3 hours for males.

The Group drives the talent management process in their respective geographies, with programmes for leadership and executive development centralised at the corporate headquarters.

<sup>2</sup> Senior management is defined as the top three individuals within each operating business unit with the highest levels of executive management.

Keppel Corporation's Group Human Resources coordinates efforts across the business units to ensure consistency in performance management and that talent reviews are conducted regularly.

To enable employees to develop and refine their skills and competencies, we customise learning and development programmes across the Group to cater to different career stages and industry needs.

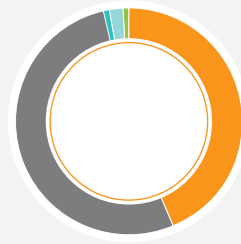
### Industry Programmes

Underscoring our commitment to nurture human capital, the Group makes significant investments to equip employees with up-to-date operational skills and certifications. We also partner with government bodies and educational institutions on initiatives targeted at grooming young talents.

The Group has been an industry partner of the Singapore-Industry Scholarship (SglS) since 2012. The SglS is a unique partnership between the Singapore government and prominent local enterprises that offers scholarships and internship opportunities to Singapore Citizens pursuing their undergraduate studies in areas related to Singapore's strategic sectors.

Keppel O&M's Memorandum of Understanding with the Institute of Technical Education (ITE), Ngee Ann Polytechnic and Singapore Polytechnic supports the skills and career development of students in the offshore and marine engineering sector.

### New Hires by Region



	No. of employees	%
● Singapore	1,247	43.8
● Asia (excluding Singapore)	1,509	53.0
● Americas	16	0.6
● Middle East & Africa	56	2.0
● Europe	18	0.6
<b>Total</b>	<b>2,846</b>	<b>100.0</b>

### Average Training Hours by Employee Category (hours)

Senior Management		24.1
Managerial		29.7
Executive		23.9
Non-Executive		15.4
Industrial/General		28.2



*Learning and development programmes across the Group cater to different career stages and industry needs.*

## Labour Practices & Human Rights

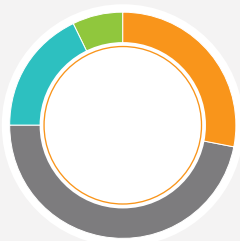
### Annual Employee Turnover<sup>1</sup> and Turnover Rate<sup>2</sup>

		Turnover Rate (%)	Turnover (No. of employees)
<b>2016</b>		<b>12.3</b>	<b>3,868</b>
2015		8.9	–
2014		8.8	–
2013		8.6	–
2012		9.9	–

### Employee Turnover<sup>1</sup> and Turnover Rate<sup>2</sup> by Region

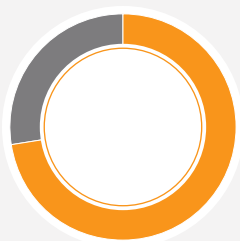
		Turnover Rate (%)	Turnover (No. of employees)
Singapore		15.2	2,165
Asia (excluding Singapore)		13.6	1,251
Americas		1.3	60
Middle East & Africa		12.9	371
Europe		3.6	21
<b>Overall</b>		<b>12.3</b>	<b>3,868</b>

### Employee Turnover by Age Group (Executive & Above)



	Turnover (No. of employees)	% of Total Turnover
● < 30 years old	302	28.1
● 30 to 39 years old	504	47.0
● 40 to 49 years old	191	17.8
● 50 years old & above	76	7.1
<b>Total</b>	<b>1,073</b>	<b>100.0</b>

### Employee Turnover by Gender (Executive & Above)



	Turnover (No. of employees)	% of Total Turnover
● Male	780	72.7
● Female	293	27.3
<b>Total</b>	<b>1,073</b>	<b>100.0</b>

Keppel O&M's Technical Associate and Assistant Technical Associate schemes are catered for trainees with GCE 'N' Level, GCE 'O' Level and ITE qualifications. Offered in collaboration with ITE, the extensive two-year work-and-study programme includes classroom learning, practical skills training, on-the-job training and soft skills training. In 2016, 23 employees under this scheme completed their NITEC and Higher NITEC education.

Keppel Land is an industry partner of the Building and Construction Authority-Industry Built Environment Undergraduate Scholarship/Sponsorship programme and offers scholarships to students who aim to pursue a career in the built environment sector. Keppel Land has awarded eight scholarships under this programme to date.

### Grooming Leaders

We offer scholarships and groom our scholars for roles across the Group according to their aspirations and qualifications. The Group also offers internships to promising tertiary students for them to gain work experience before entering the workplace.

We support employees in all levels of the company in furthering their education. In 2016, the Group sponsored 25 employees to pursue further studies.

Keppel Young Leaders provides a centralised platform to nurture young talents across the Group. To cultivate an innovative, entrepreneurial and global mindset, Keppel Young Leaders are given opportunities to work on cross-business assignments under the mentorship of senior management. Through annual symposiums, hackathon challenges and leaders' dialogues, they build networks with peers in other business units and engage with senior management.

More than 60 promising employees from across the Group participated in the Emerging Leaders Programme, which aims to strengthen core leadership skills. The programme focuses on creating a unique learning experience involving learning through action, group work, business visits, case studies and engaging with senior management.

The Group's business units offer two-year management trainee or associate programmes to nurture fresh graduates who aspire and have the potential to take on management roles.

<sup>1</sup> Turnover is defined as the total number of employees who leave the organisation voluntarily. It does not take into account employees who leave due to completion of contracts, dismissal, retirement or death in service.

<sup>2</sup> Turnover Rate is defined as the percentage of employees who leave the organisation voluntarily. It does not take into account turnover due to completion of contracts, dismissal, retirement or death in service.

Keppel O&M Management Trainees undergo comprehensive training through job rotations and mentorship programmes designed to give candidates holistic exposure to the wide spectrum of Keppel O&M's operations. Similarly, Keppel Land offers its Management Associates hands-on and in-depth learning opportunities through job rotation opportunities and training.

Keppel Infrastructure's Management Trainees build a strong foundation through hands-on roles at Keppel Infrastructure plants while honing their leadership skills and business intuition. Keppel Telecommunications & Transportation (Keppel T&T) Management Trainees go through a series of corporate and operational attachments to acquire a holistic view of the entire business.

#### **Keppel Leadership Institute**

Established in 2015, Keppel Leadership Institute, headquartered in Singapore, offers a diverse range of leadership and development programmes, delivered in modular and blended approaches. These programmes are designed in consultation with senior management and are regularly refreshed to suit the Group's evolving needs. The Institute grooms global Keppel leaders, equipping them with the capability and confidence to drive our businesses into the future.

#### **Retaining Experience**

Keppel supports re-employability beyond the statutory retirement age. Retirees are offered post-retirement employment opportunities in Keppel, in line with the Singapore Tripartite Guidelines on the Re-employment of Older Employees.

As at 31 December 2016, there were 368 re-engaged staff within the Group, of which 95 were re-employed in 2016.

Through initiatives such as the Keppel O&M Alumni, employees past and present have been able to stay connected and build meaningful networks with one another.

We also recognise retired members of the Keppel family, who have made valuable contributions to the growth of the company through the decades. In 2016, Keppel Fellows, an alumni comprising former board members of Keppel entities and selected members of senior management, was established to better engage distinguished former leaders, and harness their collective wisdom and experience.

#### **Engaging Employees**

##### **Employee Engagement Survey**

We rolled out the Keppel Global Employee Engagement Pulse Survey in 2016, which gave insight to specific areas affecting employee engagement. It was administered in eight languages to employees in 12 countries. The survey achieved a strong response rate of 96% from a sample size of over 5,000 employees. The Group achieved a high engagement score, whereby 87% of employees surveyed indicated that they would "go beyond the norm" to contribute to Keppel's success.

##### **Enhancing Communication**

Various staff engagement initiatives are organised throughout the year to enhance communication between management and staff.

The second edition of the Global Keppelites Forum, a group-wide town hall meeting,

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**Our customised learning and development programmes allow our employees to reach their fullest potential.**



*At our annual Global Keppelites Forum, senior management across the Group responded to issues and concerns brought up by employees both in Singapore and overseas via an interactive portal.*

## Labour Practices & Human Rights

**Staff engagement initiatives are organised throughout the year to forge stronger bonds among employees and enhance communication between management and staff.**

was held in February 2016. Close to 3,000 employees in over 70 locations globally tuned in to the session, which was also broadcast live via an interactive online portal.

During the session, Loh Chin Hua, CEO of Keppel Corporation, shared on the Group's overall performance, strategy and priorities. Employees also took this opportunity to pose questions to a panel comprising senior management from across the Group.

Employees are also updated on the company's performance and strategic directions at regular staff dialogue sessions organised by Keppel Corporation and our business units.

Informal sessions, such as breakfast and afternoon tea meetings, as well as monthly outdoor activities, provide opportunities for employees to interact with senior management.

On-boarding programmes are conducted to help new hires adapt. Orientation sessions in 2016 included dialogue sessions with senior management. Our new hires are also assigned buddies who help guide their professional development, and help them assimilate.

### Building Strong Teams

We believe that cohesive teams are integral to a productive workforce. We continue to build camaraderie among employees through various platforms, such as the yearly Keppel Games, a series of sports competitions initiated by Keppel Recreation Club, and volunteer activities organised by Keppel Volunteers.

### Supporting National Defence

At Keppel, we believe in contributing towards Singapore's national security. National Service (NS) is a vital component of national defence, and we support our employees' NS commitments.

In 2016, Keppel FELS, Keppel Singmarine and Keppel T&T were awarded the NS Advocate Award for Large Companies at the Total Defence Awards organised by Singapore's Ministry of Defence. The Award is the highest accolade awarded to businesses for their exemplary support towards Total Defence and in particular, NS.

### Workforce Welfare

We are committed to the well-being of our entire workforce. This includes foreign workers who live and work away from their families.

Keppel O&M provides high quality dormitories for our directly-employed foreign workers. These dormitories offer a range of amenities and recreational facilities. We also organise activities, such as talent search competitions, to promote harmonious living and bonding. Keppel Housing, which houses our yards' direct workers, provides counselling services, including a 24-hour emergency helpline, to look after our workers' mental and emotional well-being.

Other welfare initiatives organised by our business units include lunchtime talks, health screening exercises and fitness classes.



Keppel Corporation's Engagement Committee organised the inaugural Kids@Work to engage staff and their families.

## United as *OneKeppel*

The annual Keppel Games promotes camaraderie, friendly competition, team-building and healthy lifestyles.

The Keppel Games is a series of sports competitions organised annually by the Keppelite Recreation Club (KRC). The event is supported by business units across Keppel.

The 13th Keppel Games was held from May to November 2016 with the theme of 'Rising to the challenge as *OneKeppel*'. The theme resonates with Keppel's commitment to promote collaboration, harness the diverse strengths of our businesses, and hunt as a pack to seek new opportunities.

Over the seven months of competition, close to 1,000 employees participated in 16 sporting events, which ranged from tennis and dragon boat, to cyber games and international chess. By undergoing intensive training together, employees forged new friendships and stronger bonds with their teammates from other business units. The regular training also helped encourage employees to learn new sports and lead active lifestyles.

Despite the fierce competition, employees demonstrated camaraderie and commendable sportsmanship throughout the Games

by helping each other on and off the field, cheering each other on the sidelines and congratulating opposing teams on their good performance.

Lim Tow Fok, President of KRC and General Manager of Property Management at Keppel Land, said, "Keppel Games sets the perfect stage for a display of the passion, sportsmanship and team spirit of our employees. Into its 13th year, the Games has proven to be more than just a sporting event showcasing athletic prowess. It serves as an excellent platform for employees across the Group to develop new friendships, forge closer bonds and achieve our vision of *OneKeppel*. The collective pride that our employees display in flying the Keppel flag is what makes the games truly compelling."

Medals aside, the annual Keppel Games once again provided a fun and meaningful platform for employees across the Group to interact, instilled in them a sense of belonging and helped forge bonds that lead to united and effective teams.

**The annual Keppel Games aims to build cohesive teams and strong bonds among employees.**



*Participants demonstrated tremendous teamwork and tenacity at the Keppel Games.*

# Our Community

## Performance Overview

### What we said in 2016

Continue to build on sustainable programmes with beneficiaries and track impact.

Further efforts in skills-based volunteering and establish overseas volunteer chapters.

Continue to work closely with our partner organisations to achieve meaningful impact.

### What we did in 2016

Sponsored and participated in a wide range of community initiatives, investing \$5.21 million in social causes.

Unveiled Keppel Discovery Wetlands at the Singapore Botanic Gardens, jointly with NParks.

Established overseas chapters of Keppel Volunteers in Brazil, China, the Philippines and Vietnam.

Keppel Volunteers continued to conduct financial literacy and other skills-based workshops for children from low-income families.

### What we plan to do

Continue to develop sustainable programmes with our partners and track the outcomes of our efforts.

Increase employee volunteerism, including in areas such as skills-based volunteer programmes.

Further align philanthropic giving with volunteer programmes to deliver stronger impacts.



Our Volunteers engage young children at the Keppel Centre for Art Education in the National Gallery Singapore to inspire creative and critical thinkers.



Investment in Social Causes

\$5.21m

Invested in social causes in 2016.

Employee Volunteerism

8,000hrs

Of community work achieved by Keppel Volunteers in Singapore.

## We aim to deliver lasting socio-economic benefit to local communities through programmes aligned with our corporate priorities.

### Overview

Keppel aims to deliver lasting socio-economic benefit to the communities where we operate. In engaging and nurturing communities, we aim to achieve a sustainable future together.

We invest in programmes aligned with our Sustainability Framework, which outlines Keppel's commitment to Sustaining Growth, Empowering Lives and Nurturing Communities.

We champion initiatives that protect and help improve the environment. As leaders in our businesses, we also support industry efforts that foster collaboration to promote sustainable development.

We empower lives by participating in workforce development programmes that equip individuals with relevant skills and experience, and we spearhead initiatives that instil an appreciation for the arts in children and youth.

### Management Approach

Community development is a material topic for Keppel. As a Founding Member of the Company of Good programme by the National Volunteer & Philanthropy Centre, Keppel strives to champion holistic corporate giving in Singapore.

In partnership with organisations that share our values, we commit up to 1% of the Group's net profit to worthy social

and environmental causes. These contributions are coordinated and disbursed by Keppel Care Foundation, the Group's philanthropic arm, which is governed by its own Board of Directors. The Foundation has disbursed \$25 million to worthy causes till date, since its launch in 2012.

To deliver a greater positive impact, we bolster philanthropic giving with employee volunteerism led by Keppel Volunteers, the Group's volunteer movement. Employees are given two days of paid volunteer leave annually.

In 2016, the Group's total social investment spend was \$5.21 million. Employees across the Group in Singapore achieved over 8,000 hours of community service, an increase of 3,000 hours over the 5,000 hours in 2015.

Keppel is a Gold Member of Global Compact Network Singapore, the national society championing Corporate Social Responsibility (CSR) in Singapore. To promote dialogue on CSR and social innovation, Keppel supported the CSR and Social Innovation Forum in 2016. The conference was jointly organised by Global Compact Network Singapore and Social Innovation Park, and explored ideas and initiatives to support the creation of an ecosystem that rewards sustainable businesses and ground-up innovation.



Keppel Volunteers planted trees at the Keppel Discovery Wetlands as part of the Group's commitment to environmental conservation.

## Our Community

### Sustaining Growth Conserving Biodiversity

Keppel committed \$2.08 million to the establishment of Keppel Discovery Wetlands, a freshwater forest wetland ecosystem historically found in the vicinity of the Singapore Botanic Gardens.

The restored 1.8 hectare forest wetlands which is located in the Learning Forest extension of the Gardens enhances the biodiversity in the area and provides opportunities for members of the public to experience a freshwater forest wetland habitat in the heart of the city.

Keppel Volunteers will serve as Green Ambassadors for the wetlands, and engage schools, community groups and other

visitors to promote eco-consciousness and facilitate learning of Singapore's freshwater swamp ecosystem (see pages 90 and 91).

Other environmental initiatives include Keppel Volunteers' participation in NParks' Intertidal Watch survey which supports the science-based management of Singapore's coastal areas. Employees from Keppel FELS and BrasFELS also participated in beach clean-ups in Singapore and Brazil respectively.

### Raising Eco-Consciousness

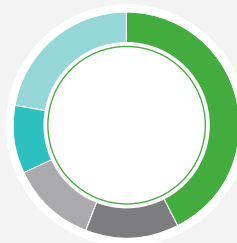
In support of Earth Hour, non-essential lights at Keppel's local and overseas yards, plants and buildings were turned off for an hour on 19 March 2016 as a

symbolic gesture of support. Educational materials on energy conservation were shared across business units, and external stakeholders, such as Keppel Land's tenants as well as residents of Sino-Singapore Tianjin Eco-City, were encouraged to participate.

To mark Earth Day on 22 April 2016, employees from Keppel Subic Shipyard planted 100 saplings in the yard's facility, while Keppel Land staff and management signed pledges to fight climate change.

In support of World Environment Day on 5 June 2016, Keppel's businesses organised a range of activities to raise environmental consciousness and encourage employees to do their part for a greener future.

Social Investment Spending by Project Type, 2016 (%)



	%
● Education	42.6
● Industry Advancement	13.5
● Arts, Sports and Community Development Projects	12.1
● Care for the Underprivileged and Healthcare	9.8
● Environment	22.0
<b>Total</b>	<b>\$5.21 million 100.0</b>



Employees from Keppel Subic Shipyard planted 100 saplings in the yard's facility to support Earth Day.

Keppel Land came onboard as a strategic partner of Ricoh's Eco-Action Day for the fourth consecutive year. Eco-Action Day roadshows were held in the lobbies of Keppel Land's and Keppel REIT's office buildings in the month of June. Keppel employees were stationed onsite to educate tenants and visitors of these buildings on how they can reduce the environmental impact of their actions at work and at home.

### Advancing Our Industries

Keppel Corporation is the sole sponsor of the Lee Kuan Yew World City Prize. This biennial award honours outstanding achievements and contributions to the creation of liveable, vibrant and sustainable urban communities around the world. The award is jointly organised by Singapore's Urban Redevelopment Authority and the Centre for Liveable Cities.

Separately, the Keppel Group continued its support of Singapore International Energy Week (SIEW) in 2016 for the seventh year. The annual event, organised by Singapore's Energy Market Authority, facilitates the exchange of ideas and discussions on pertinent energy issues. Over 13,000 energy professionals, policymakers and commentators from over 20 countries exchanged insights at SIEW 2016.

To foster thought leadership on green buildings, Keppel Land continued its support of the International Green Building Conference in 2016. Organised by the Building and Construction Authority of Singapore, the event brought together over 1,000 thought leaders, real estate developers, urban planners, architects and engineers to discuss and develop green building solutions for a sustainable future.

### Empowering Lives Promoting Workforce Development

Keppel Offshore & Marine (Keppel O&M) and Keppel Logistics are both participants of the Singapore Workforce Development Agency's SkillsFuture Earn and Learn programme. The programme aims to enhance the skills and employability of students in the offshore and marine engineering sector as well as the logistics sector by offering on-the-job training and career placements.

In the Philippines, Keppel Batangas Shipyard offers out-of-school youth full scholarships in technical trades such as shielded metal arc welding and structural fitting. Trainings are conducted at the Keppel Batangas Training Centre, and upon completion of the apprenticeship programme, the youth are offered employment opportunities with the shipyard or its subcontractors. In 2016, 68 scholarships were awarded.

**We invest in programmes aligned with our Sustainability Framework, which guides Keppel's commitment to Sustaining Growth, Empowering Lives and Nurturing Communities.**



*Keppel Corporation is the sole sponsor of the Lee Kuan Yew World City Prize. Singapore's Prime Minister Lee Hsien Loong (centre) presented this biennial award, which honours outstanding achievements and contributions to the creation of liveable, vibrant and sustainable urban communities around the world, to H.E. Federico Gutierrez (second from right), the Mayor of Medellin, Colombia.*

## Our Community

**We strongly support the advancement of the arts and believe that an appreciation of the arts should be cultivated from a young age.**

Acknowledging Keppel's efforts, the Philippines Economic Zone Authority conferred Keppel Subic Shipyard with the Outstanding Community Projects Award in 2016.

### Promoting Education

Improving access to education empowers children who are marginalised, and levels their playing field.

Since its inception in 2012, Keppel Care Foundation has disbursed over \$11 million to educational causes, which include scholarships and bursaries for students of local universities and institutes of higher learning. Over 200 scholarships, academic awards, bursaries and study grants have been given to deserving students from low-income families. These include the Keppel Bursary and Keppel Engineering Bursary offered by the National University of Singapore; the Keppel Care Foundation-Singapore University of Technology and Design Scholarship (SUTD), Keppel Award of Excellence and Keppel Bursary Award offered by SUTD, and the Keppel Study Grants and Keppel Gold Medals offered by the Singapore Institute of Technology.

Keppel also seeks to make a positive difference in the overseas markets

where we operate. Keppel AmFELS contributes to a scholarship fund for local state universities in Texas, USA, while Caspian Shipyard Company contributes to an endowment fund of the Azerbaijan Diplomatic Academy.

In Vietnam, Keppel Land promotes child literacy in the rural outskirts of Ho Chi Minh City through its sponsorship of Words on Wheels, a mobile library programme in partnership with Singapore International Foundation. To date, more than 3,000 primary and secondary school children have benefitted from the English and Information Technology trainings provided under this programme. Over 80 employees have also made 11 volunteer trips to help facilitate learning activities.

In Brazil, BrasFELS engineers lead Teach-It-Forward, a programme to benefit public school children and youth in Angra dos Reis. BrasFELS volunteers conduct Portuguese and Mathematics classes for students in need of extra academic help. High school students are also invited to the BrasFELS shipyard, where volunteers share their academic and professional journeys to inspire the students. Over a hundred students benefitted from this programme in 2016.



*Keppel Land sponsors Words on Wheels in Vietnam, which aims to improve child literacy in rural outskirts. Employees also make volunteer trips to facilitate learning activities.*

### Arts Advocate

We believe that the arts inspire, contribute towards civic engagement and social cohesion, and build bridges between cultures. Through supporting the arts, we aim to stimulate the cross-fertilisation of ideas, and foster creativity and expression. This will in turn contribute to the vibrancy of our communities.

Singapore's National Arts Council awarded Keppel Corporation its ninth consecutive Distinguished Patron of the Arts award in 2016, in recognition of our contribution to Singapore's art scene.

### Keppel Centre for Art Education

Created to develop curiosity and imagination in children and youth, the Keppel Centre for Art Education at the National Gallery Singapore provides creative learning spaces for families, students and educators to experience, create and talk about art. The Centre is the region's first art education facility of its kind in the region.

Established with a \$12 million commitment from Keppel, the Centre is designed to inspire learning in young children through art. The Centre features four vibrant spaces, namely the Art Corridor, Art Playscape, Project Gallery and Children's Museum. Guided school tours and workshops introduce visual

literacy, as well as analytical and interpretive skills to students and support Singapore's national curriculum.

The Centre benefitted over 300,000 participants in 2016. Over 50 Keppel Volunteers have been trained under the 'Best Friends of the Gallery' programme and have contributed more than 500 hours facilitating activities for young visitors at the Centre every weekend.

### Keppel Nights

Keppel Nights, developed in partnership with Esplanade – Theatres on the Bay, provides students from heartland schools with access to world-class performances, such as 'Sleeping Beauty' by award-winning choreographer Matthew Bourne and 'Savage Land' by the acclaimed Beijing People's Art Theatre. Since its relaunch in November 2013, the programme has benefitted close to 20,000 students from 72 schools.

Keppel Nights includes an element of experiential learning, with dance, music and drama workshops that give students a chance to try out various art and cultural forms and get a taste of performing.

### Nurturing Communities

Keppel supports Community Chest in its fundraising efforts. Community Chest supports a wide range of charities that



*Keppel contributes to promoting the arts through Keppel Nights, which provides students from heartland schools with access to various art and cultural forms.*

## Our Community

**Keppel seeks to make a positive difference in communities wherever we operate.**

reach out to the disadvantaged in society. Business units including Keppel FELS, Keppel Shipyard, Keppel Singmarine and Keppel Logistics have been strong partners of Community Chest's SHARE, a workplace donation programme, since 1988, with the Group's donations now averaging at \$16,000 per month.

In Singapore, Keppel Volunteers organise regular and diverse activities with beneficiaries, such as students of Care Corner and senior citizens of Thye Hua Kwan Senior Activity Centres (see page 89).

Keppel Volunteers has also been coordinating the Group's support of blood donation drives by the Singapore Red Cross and the Health Sciences Authority of Singapore since 2012. The donation drives play a crucial role in growing the blood donor pool in Singapore. For its efforts, Keppel Volunteers was recognised as a Blood Mobile Organiser Merit Winner by the Singapore Red Cross and the Health Sciences Authority of Singapore on World Blood Donor Day 2016.

Keppel Land, in partnership with its business partner, built a community facility for underprivileged children in Jakarta, Indonesia. The facility is well-furnished with a multi-purpose

hall, library, playground and sports facilities. Named *Ruang Publik Terpadu Ramah Anak Duri Kosambi*, this facility is part of the Jakarta government's citywide initiative to build community spaces for low-income families.

In Brazil, volunteers from BrasFELS regularly visit the residents of Elderly Home *São Vicente de Paulo* and hold donation drives to provide the home with daily necessities. BrasFELS also hosted a group of special needs students to a visit at the shipyard in 2016, when the shipyard received an Olympic Torch bearer and representatives of the Olympic Committee who disembarked from a boat into BrasFELS during their journey through Angra dos Reis. It was an inspiring occasion for all when the torch bearer walked the length of the yard's Finger Pier before joining the students for photos.

In Tianjin, China, volunteers from Keppel Land China (Tianjin) dedicate their time and efforts to provide companionship to the elderly living in Hangu Social Welfare Home, and children of Xiangyu Autism Mutual Aid Association. In Nantong, volunteers from Keppel Land China (Nantong) and Keppel Nantong Shipyard volunteer regularly at the Nantong Social Welfare Institute.



*Keppel Volunteers organises a diverse range of activities for elderly beneficiaries.*

In the Philippines, volunteers from Keppel Batangas Shipyard and Keppel Subic Shipyard cleaned, painted and repaired facilities at various educational institutions as part of National School Maintenance Week.

### Running for a Cause

Keppel employees frequently rally to participate in charity sports events that support worthy causes.

Employees from across the Group joined over 5,000 participants from the finance industry and Singapore Exchange (SGX)-listed companies in the SGX Bull Charge Run 2016 to raise money for four charities in Singapore, namely AWWA, Fei Yue Community Services, Autism Association (Singapore) and Shared Services for Charities.

To raise funds for Charity Water, a non-profit organisation that provides clean and safe drinking water to people in developing countries, employees participated in the Green Corridor Run that was held in conjunction with Singapore's World Water Day celebrations.

Teams from Keppel put their fitness to the test to raise money for charitable causes. Runners from Keppel came in third place in the 'Race to the Sky'

Vertical Marathon, which raised funds for Community Chest beneficiaries. Our teams also emerged as the Champion of Football With A Heart, a football fundraiser jointly organised by Singapore Pools, Sport Singapore and Football Association of Singapore, and was placed 3rd in Singapore Cancer Society's Race Against Cancer.

### Spurring Excellence

Keppel extended its support for the Singapore Table Tennis Association (STTA) in 2016, committing to sponsor the Keppel-STTA Awards and the Keppel-Clementi Zone Training Centre for another year.

Since 2013, Keppel has provided cash awards to recognise and encourage national table tennis players with standout performances at regional and international tournaments as well as individuals who have demonstrated commendable character traits.

The Keppel-Clementi Zone Training Centre, which Keppel has supported since 2011, aims to groom future table tennis talents from as young as age five. Our support goes towards funding quality coaching staff, equipment and administrative costs, allowing STTA to maintain affordable training fees.



Volunteers from BrasFELS hosted a group of special needs students to a visit at the shipyard during the Olympic Torch Relay.

## Our Community

### Special Focus

## Keppel Care Foundation: A Holistic Approach to Giving

Keppel Care Foundation is the Group's philanthropic arm which sharpens, coordinates and sustains the Group's efforts in corporate giving.

Since its inception in 2012, Keppel Care Foundation has disbursed \$25 million in aid of causes that resonate with the company's beliefs and values. It focuses on initiatives that protect the environment, promote education, arts and culture, or care for the underprivileged.

Such initiatives include the Keppel Discovery Wetlands at Singapore Botanic Gardens, the Keppel Centre for Art Education at the National Gallery, KK Women's and Children's Hospital (KKH) Health Endowment Fund, as well as endowment scholarships, bursaries and awards with various institutes of higher learning.

Where possible, the foundation's contributions are complemented by employee volunteerism.

Robert Chong, CEO of the Foundation, who is also Keppel Corporation's Director of Group Human Resources, shared, "We strive to

achieve a corporate giving approach that is not only impactful and sustainable, but also engaging for our employees. This helps amplify desirable outcomes for our beneficiaries."

For example, Keppel Volunteers facilitate activities for young visitors at the Keppel Centre for Art Education and organise ward activities for the children in KKH's subsidised wards.

The Foundation disbursed \$4.11 million in 2016, with part of the funds channelled to the following causes:

- Singapore Cancer Society to provide subsidies, assistance, rehabilitation, hospice care and screenings for needy patients;
- Club Heal, to provide rehabilitation services to persons with mental illness; and
- NTUC U-Care Fund, to provide financial assistance to low-income union members and their children.

**Keppel Care Foundation focuses on initiatives that protect the environment, promote education, arts and culture, and care for the underprivileged.**

*Keppel Care Foundation's support of the KKH Health Endowment Fund is complemented by outreach activities organised by Keppel Volunteers.*





## Keppel Volunteers: Making a Difference

**Our community outreach initiatives are spearheaded by Keppel Volunteers, our Group-wide volunteer movement.**

Keppel Volunteers, a ground-up movement, was started in 2000 by a group of Keppel employees. The group collaborates with numerous charities and voluntary welfare organisations on regular activities to make a difference to the lives of the less privileged. In 2016, Keppel Volunteers achieved over 8,000 hours of community service in Singapore, an increase of 3,000 hours over the 5,000 hours in 2015.

Keppel Volunteers works closely with our partners to organise regular and diverse activities for beneficiaries such as the children from Care Corner and KKH, as well as senior citizens from Thye Hua Kwan Senior Activity Centres.

Since 2015, Keppel has also taken steps to initiate skills-based volunteerism projects. In the past year, finance officers in the Group organised a series of workshops to equip low-income families with financial literacy skills. The Company intends to drive more of such initiatives that match a volunteer's skills with meaningful opportunities to use them.

To encourage volunteerism, employees are given two days of volunteer leave annually. The Company has also designated August as Keppel Community Month to rally volunteers and spur collaboration among business units in driving outreach activities. Regular volunteers are also recognised for their efforts at the annual Keppel Volunteers appreciation event.

Teri Liew, President of Keppel Volunteers and Deputy General Manager of Group Corporate Communications, Keppel Corporation, enthused, "In helping others, we enrich our own lives and experiences. We bond with like-minded colleagues and pick up new soft skills, such as interacting with children, or caring for the elderly and disabled. The planning and executing of the diverse outreach programmes give our younger colleagues opportunities to develop their leadership skills, and also enhance teamwork and collaboration across business units."

**Keppel Volunteers collaborates with numerous non-profits to make a difference in the lives of the underprivileged.**



*Keppel Volunteers organise regular, meaningful activities that aim to nurture and empower our beneficiaries.*

## Our Community

## Special Focus

## Keppel Discovery Wetlands: Conserving Our Biodiversity

Located in the Singapore Botanic Gardens, the Keppel Discovery Wetlands allows members of the public to experience a unique natural habitat in the heart of the city.

Keppel has committed \$2.08 million to the Garden City Fund to support the restoration of a freshwater forest wetland ecosystem historically found in the vicinity of the Singapore Botanic Gardens, which is Singapore's first UNESCO World Heritage site.

This restored freshwater forest wetlands, named Keppel Discovery Wetlands, was officially opened by Prime Minister of Singapore Lee Hsien Loong on 31 March 2017. Located in the Learning Forest extension of the Singapore Botanic Gardens, the restored 1.8 hectare forest is designed with ecological considerations in mind, and includes a carefully curated plant collection of over 200 species. It enhances the biodiversity found in the area and provides opportunities for the public to access and experience a freshwater forest wetland habitat right in the heart of the city.

At the launch of the Learning Forest, Mr Lee shared, "Our Botanic Gardens thrives not because of the interesting mix of plants, but because within it, there is life. It is teeming with activity.

It is loved and nurtured by the community, by all age groups. I would like to thank everyone who have worked so hard to create this Learning Forest - corporate partners such as Keppel and Singapore Press Holdings, the many volunteers who spend time planting trees or leading guided walks. For them, it is a labour of love."

On the initiative, Keppel Corporation Chairman Lee Boon Yang commented, "The Keppel Discovery Wetlands is a restored freshwater forest wetland habitat in the heart of our city. It provides a unique opportunity for Singaporeans to learn about our amazing biodiversity. This initiative resonates with Keppel's commitment to sustainable development. We hope that all visitors will be inspired to better understand and appreciate Singapore's natural environment."

Keppel Volunteers will serve as Green Ambassadors for the Keppel Discovery Wetlands, engaging schools and community groups so that visitors can discover and learn more about the freshwater swamp ecosystem and its flora and fauna.

As a symbol of Keppel's commitment towards environmental conservation, 50 Keppel Volunteers and senior management from the Keppel Group planted trees of various species at the Wetlands during the unveiling of plans for the Wetlands in 2016.

**An Immersive Outdoor Experience**

The habitats in the Keppel Discovery Wetlands are complemented by trails and boardwalks. Features of the Wetlands include the Orchid Islands, Botanists' Boardwalk, Pulau Marsh and Discovery Trail.

**Orchid Islands**

The Orchid Islands showcases a large number of native orchids, many of which have been conserved through NParks' native orchid conservation programme. This is the first time that the public will be able to admire the forms and colours displayed by such a wide variety of native orchids in their natural habitat.

**Botanists' Boardwalk**

At the Botanists' Boardwalk, visitors will be able to learn about the historic discoveries made by the Gardens' earliest botanists, who contributed to the knowledge of the region's flora by making frequent expeditions to study the plants growing in various localities and habitats throughout Southeast Asia.

**Pulai Marsh**

The Pulau Marsh is a recreation of the freshwater swamp habitat historically found in the vicinity of the Singapore Botanic Gardens area. With its restoration, the Pulau Marsh enables native species in the area to flourish, and provides a refuge in the city for wetland wildlife to thrive.

**Discovery Trail**

The Discovery Trail brings visitors through the Orchid Islands, Botanists' Boardwalk and Pulau Marsh, where they will be able to see and be educated about plants that grow in frequently-flooded, inaccessible places.

The Keppel Discovery Wetlands provides opportunities for our volunteers to serve as Green Ambassadors, engaging schools and community groups.

Prime Minister of Singapore Lee Hsien Loong (second from left) at the Keppel Discovery Wetlands. Accompanying him were Lawrence Wong (in white, third from right), Minister for National Development and Second Minister for Finance; Lee Boon Yang (third from left), Chairman of Keppel Corporation; and Loh Chin Hua (far left), CEO of Keppel Corporation.



Visitors can discover the diverse flora and fauna at the Keppel Discovery Wetlands.

## About the Report

This report focuses on the sustainability strategy and practices of Keppel Corporation and its subsidiaries, namely the material environmental, social and governance (ESG) aspects of our business operations.

This report provides an overview of our management approach, priorities, targets and performance reviews in key areas. The content was defined by identifying and prioritising the Company's material ESG factors through a robust materiality analysis process (see pages 10 and 11). We printed limited copies of this report to minimise environmental impact. A PDF version is available at [www.keppcorp.com](http://www.keppcorp.com).

Our stakeholders are advised to read Keppel Corporation's Report to Shareholders 2016, available at [www.keppcorp.com/annualreport2016/](http://www.keppcorp.com/annualreport2016/), for more information on the Group's businesses, strategy, performance and prospects.

### Reporting Period & Standards

This report is published annually and covers the same period as the financial year of the Company (January to December 2016). Our last sustainability report was published in July 2016. Where possible, we shared three-year historical information to provide a meaningful basis for comparison.

This report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards: Core option and Singapore Exchange's Practice Note 7.6 Sustainability Reporting Guide.

The report was submitted for the GRI Materiality Disclosures Service, and GRI confirmed the correctness of the locations of the materiality disclosures (GRI 102-40 to 102-49). The GRI Materiality Disclosures Service organisational mark is located on page 96. We used standard

units of measurement. Conversion factors may be found in the relevant sections. All dollar values expressed are Singapore dollars.

### Independent Assurance

Keppel Corporation appointed an independent third party, DNV GL, to provide assurance on this report.

The content was reviewed and the accuracy and reliability of the statements were validated in accordance with the DNV GL Verification Protocol for Sustainability Reporting, VeriSustain™. The principles and concepts in this protocol draw on the GRI Standards, the AA1000 Assurance Standard 2008 by AccountAbility and the International Standard on Assurance Engagements 3000 by the International Federation of Accountants.

All underlying systems and process that support the Company's sustainability framework were reviewed in adherence to the AA1000 AccountAbility Principles of Inclusivity, Materiality, Responsiveness and Completeness, as well as the GRI Standards. The Assurance Statement is published on pages 93 to 95.

### Feedback

This report demonstrates our commitment to keep our stakeholders abreast of Keppel's sustainability performance. We welcome feedback.

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# Independent Assurance Statement

## Introduction

DNV GL Business Assurance Pte Ltd, part of DNV GL Group, has been engaged by Keppel Corporation Ltd. (Keppel) to provide independent assurance over the Sustainability Report 2016 (the Report) which is available to stakeholders from Keppel's website and in print.

Keppel is responsible for the collection, analysis, aggregation, preparation and presentation of the printed version of the Report. The responsibility of DNV GL is to provide independent assurance to the management of Keppel on the reliability of the information contained in the Report and to express overall opinion as per the scope of assurance engagement as defined in this statement.

Our responsibility is in accordance with the terms of reference agreed on with Keppel. The assurance engagement is based on the assumption that the data and information provided are complete and true.

The intended recipients of the assurance statement are the stakeholders of Keppel.

The Report covers the sustainability performances from the global operations and all subsidiaries and associated companies over which the Keppel Group has management control. The boundary of the report for each area is defined in the respective chapters and unless otherwise stated, will include those subsidiaries that Keppel has management control.

## Scope of Assurance

The scope of work included a review of sustainability activities and performance data over the reporting period 1 January to 31 December 2016. This included:

- Evaluation of the reporting principles for defining the sustainability report content and the quality in the Global Reporting Initiative (GRI) Standards;
- Evaluation of adherence to AccountAbility's principles provided in AA1000 AccountAbility Principles Standard 2008;
- Statement, information and performance data contained within the Report;
- Keppel's process for determining material aspects for reporting and the management approach to material issues; and
- Keppel's process for generating, gathering and managing the quantitative and qualitative data in the Report.

## Verification Methodology

The assurance engagement was conducted in line with the requirements of the AA1000 Assurance Standard 2008, Type 2 assurance as well as the DNV GL Verification Protocol for Sustainability Reporting V5.0<sup>1</sup> (VeriSustain™). A specific evaluation of the information and data on sustainability performance was related to Keppel's selected core indicators set forth in the GRI Standards, as indicated in the GRI Content Index included in the Report. We applied a moderate level of assurance. The audit was carried out in March and April 2017 at the Keppel Corporation head office in Singapore and included site visits to the Keppel Land head office and Keppel FELS. As part of the verification, we performed sample-based audits and undertook the following activities:

- Challenged the sustainability-related statements and claims made in the Report and assessed the robustness of the underlying data management system, information flow and controls;
- Interviewed representatives from the corporate headquarters as well as those from the various business units;
- Conducted document reviews, data sampling and interrogation of supporting databases and the associated reporting system as they relate to selected content and performance data;
- Reviewed the actions taken based on the materiality analysis carried out in 2016.

## Limitation

The engagement excludes the sustainability management, performance and reporting practices of Keppel's suppliers, contractors and any third-parties mentioned in the Report. DNV GL did not interview external stakeholders as part of this assurance engagement.

Any financial information from Keppel's annual report and company reporting on operations in 2016 or other sources are not included in the scope of the assurance. Economic performances based on the financial data were cross-checked with internal documents and the audited financial statements. The aggregation and calculation processes for building economic performances were reviewed and tested by the verification team.

Limited depth of evidence gathering was applied to inquiry and analytical procedures, as well as limited sampling at lower levels in the organisation. The baseline data for environmental and social performance is not verified, while the aggregated data is used for the

<sup>1</sup> The principles and concepts of the VeriSustain™ protocol are aligned with GRI Standards and the Assurance Standard AA1000AS. The protocol is available upon request at [www.dnvgl.com/assurance/reporting/verification.html](http://www.dnvgl.com/assurance/reporting/verification.html)

## Independent Assurance Statement

verification. DNV GL expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Assurance Statement.

### Conclusion

In DNV GL's opinion, and based on the scope of this assurance engagement, nothing has come to our attention to suggest that the Report does not properly describe Keppel's adherence to the Principles for Defining Report Content in GRI Standards.

DNV GL believes that the report has been prepared in accordance with the Core option of the GRI Standards. Further opinions with regard to the following Principles are made below:

### Inclusivity

Keppel has identified six internal and external stakeholder groups such as Customers, Employees, Governments, Shareholders, Local Communities and Suppliers. Keppel's stakeholder engagement activities occurred at the Group and business unit level through various platforms. In our opinion, the stakeholder group could include more overseas representations of where Keppel has significant impact or operations.

### Materiality

The internal review of businesses was combined with a review of external stakeholder issues to identify the issues that are significant to the stakeholders, so that the report content remains relevant to the stakeholders' concerns and expectations. In 2016, Keppel reviewed the material environmental, social and governance issues internally with the Group Sustainability Working Committee and Steering Committee. The material issues were further reviewed by Keppel Corporation's Board of Directors in 2017. The information has been considered in the preparation of the Report.

### Responsiveness

The Report provides a comprehensive overview of the Group's activities; it keeps stakeholders informed of corporate decisions in terms of achievements and performance in relation to the sustainability material arguments. Keppel's stakeholder dialogues and materiality review were used to determine the type of information that is material to stakeholders. The information is considered in the preparation of the Report.

### Completeness

The Report has adequately covered the sustainability strategy, management approach and sustainability performances against the GRI selected indicators. The boundary of the Report covers the sustainability performances from the global operations and all subsidiaries and associated companies over which the Keppel Group has management control. A sustainability report should include in its boundary all entities that generate significant sustainability impacts (actual and potential) rather than solely within its management influence.

### Accuracy & Reliability

Keppel has selected, compiled and reported information in a relatively consistent manner. The stakeholder can analyse changes in sustainability performance over time. Data inconsistencies identified during the verification process were corrected prior to the Report being published. DNV GL concludes that the level at which the Report adheres to the principle of Accuracy and the Reliability of the information on sustainability performance can be further improved.

### Report Quality: Balance & Neutrality

The document allows the reader to examine both the positive and the negative trends of Keppel's performance in 2016, presenting a balanced account of the activities and results relevant to the reporting year, which is consistent with the corporate strategies. We consider the Report to be an impartial description of Keppel's sustainability impact.

### Findings in Relation to Specific Sustainability Performance Information

The Report covers global operations and all subsidiaries and associated companies for which Keppel has management control, unless otherwise indicated. The reporting of the sustainability performance presented in the Report is collected centrally from the operating companies by a dedicated function in the Group and consolidated for reporting, which is a common approach used by large conglomerates.

DNV GL has evaluated the reliability of data and information with regard to energy consumption, waste generation, greenhouse gas emissions, and health and safety performance indices at the Group level and operating companies' level for Type 2 Assurance.

Keppel uses a system called CR360 to gather sustainability performance data globally. The data used for the Report this year is based on a combination of manual collection and collated information from CR360. The data owners interviewed are able to demonstrate that the trace to the origin, and the data source of the specific data and information are identifiable.

### Opportunities for Improvement

The following is an excerpt from the observations and opportunities reported to Keppel's management. However, these do not affect our conclusions on the Report and are provided to encourage continual improvement. Without qualifying our conclusion above, DNV GL makes the following recommendations:

- To further enhance the internal verification process to improve consistency in data collection;
- To consider expanding the aspect boundary and including coverage on material aspects associated with suppliers; and
- To consider further expanding on the disclosure of management approach (DMA), in particular, long term plans to address aspect-specific DMA related to material issues.

### Statement of Competence & Independence

DNV GL is a leading provider of sustainability services, including the verification of sustainability reports. Our environmental and social assurance specialists operate in over 100 countries. DNV GL was not involved in the preparation of any statements or data included in the Report except for this Assurance Statement. DNV GL maintains complete impartiality toward stakeholders interviewed during the verification process.



**Grace Cheah**  
Lead Assurer



**Kwak Seung Hyun**  
Assurance Reviewer

DNV GL Business Assurance Pte Ltd.  
5 May 2017  
Singapore



**AA1000**  
Licensed Assurance Provider  
000-10



**DNV·GL**

# Global Reporting Initiative (GRI) Content Index



This report has been prepared in accordance with the GRI Standards: Core option

GRI Indicator	General Disclosures	Page Reference*
<b>Organisational Profile</b>		
102-1	Name of the organisation	Cover
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102-3	Location of headquarters	Back Cover
102-4	Location of operations	4-5
102-5	Ownership and legal form	6, AR 2016 (173-181)
102-6	Markets served	4-5
102-7	Scale of the organisation	4-6, 24-27
102-8	Information on employees and other workers	71-73
102-9	Supply chain	22-23
102-10	Significant changes to the organisation and its supply chain	11, 22-23
102-11	Precautionary Principle or approach	33-39, AR 2016 (88-89)
102-12	External initiatives	7, 12-13, 15-17
102-13	Membership of associations	20, 67-68
<b>Strategy</b>		
102-14	Statement from senior decision-maker	2-3
102-15	Key impacts, risks, and opportunities	15-17, 36-39
<b>Ethics and Integrity</b>		
102-16	Values, principles, standards, and norms of behaviour	7, 10, 35
102-17	Mechanisms for advice and concerns about ethics	35, AR 2016 (82-83)
<b>Governance</b>		
102-18	Governance structure	9-10, 29-33
102-19	Delegating authority	9-10
102-20	Executive-level responsibility for economic, environmental, and social topics	9-10
102-21	Consulting stakeholders on economic, environmental, and social topics	20-21
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<b>GRI Indicator</b>	<b>General Disclosures</b>	<b>Page Reference*</b>
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102-24	Nominating and selecting the highest governance body	30-32, AR 2016 (67-68)
102-25	Conflicts of interest	30-35, AR 2016 (65, 75-77)
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102-32	Highest governance body's role in sustainability reporting	9-11
102-33	Communicating critical concerns	30-31, AR 2016 (88)
102-35	Remuneration policies	32-33, AR 2016 (69-74)
102-36	Process for determining remuneration	32-33, AR 2016 (69-74)
<b>Stakeholder Engagement</b>		
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102-41	Collective bargaining agreements	72
102-42	Identifying and selecting stakeholders	20
102-43	Approach to stakeholder engagement	21, 57
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<b>Reporting Practice</b>		
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\* References to Keppel Corporation's Report to Shareholders 2016 are expressed as 'AR 2016 (page number)'. Keppel Corporation's Report to Shareholders 2016 is available at [www.keppcorp.com/annualreport2016](http://www.keppcorp.com/annualreport2016)



## Global Reporting Initiative (GRI) Content Index

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\* References to Keppel Corporation's Report to Shareholders 2016 are expressed as 'AR 2016 (page number)'. Keppel Corporation's Report to Shareholders 2016 is available at [www.keppcorp.com/annualreport2016](http://www.keppcorp.com/annualreport2016)

## Key Personnel

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### Group Sustainability Steering Committee

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