



# Solutions for Sustainable Urbanisation

Sustainability Report 2017

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## 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.

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## Mission

Guided by our operating principles and core values, we will deliver solutions for sustainable urbanisation profitably, safely and responsibly.

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## 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.

# Solutions for Sustainable Urbanisation

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.



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# Letter to Our Stakeholders

GRI 102-14



**Loh Chin Hua**  
Chief Executive Officer

We are a multi-business company driven by a common purpose to provide solutions for sustainable urbanisation, while creating value for our stakeholders and improving lives wherever we operate.

## Dear Stakeholders,

Keppel turns 50 in 2018. Starting from humble beginnings as a ship repair yard in Singapore, we have grown to become a multi-business company driven by a common purpose to provide solutions for sustainable urbanisation, while creating value for our stakeholders and improving lives wherever we operate.

Sustainability is at the heart of our business and we carefully consider environmental, social and governance issues in the determination of our strategy and policies. Our approach to sustainability starts with our goal to run a profitable, safe and responsible business providing the best value proposition to customers, while guided by our core values and operating principles.

### Corporate Citizenship in a Global Context

This year, Keppel Corporation became a signatory of the United Nations Global Compact, the world's largest corporate sustainability initiative to mobilise a global movement of sustainable companies. We are committed to the Compact's 10 universal principles on human rights, labour, environment and anti-corruption, which resonate strongly with our own core values.

We are also committed to working towards the achievement of the Sustainable Development Goals, which reflect a globally shared ambition to improve life, in a sustainable way, for future generations. In this report, we have shared the different ways in which Keppel contributes towards advancing these global goals.

The Paris Agreement has been ratified by more than 170 countries, and climate change is a key topic on the international agenda. The Singapore government has also stepped up efforts to lower the nation's environmental impact through various measures, including the introduction of a carbon tax targeting large direct emitters of Greenhouse Gases.

Keppel is committed to support efforts by the international community and the Singapore government in tackling climate change. In 2014, we announced our target of achieving a 16% improvement in carbon emissions from 2020 business-as-usual levels. In 2017, we evaluated the Group's progress towards this goal based on carbon emissions intensity, and affirmed that we are on track to achieve this target.

In addition, we have set a longer term target of achieving a 28.8% reduction in carbon emissions intensity by 2030, from 2010 levels, in our global operations. The new target is aligned with Singapore's national

target, announced in 2015. We are pleased to share that as at end 2017, our operations in Singapore, which account for 80% of the Group's total emissions, have achieved a 27.7% cumulative average reduction in emissions intensity from our 2010 baseline.

Energy efficiency initiatives implemented across the Group in 2017, including Keppel Land's Green Mark-certified developments, are estimated to have saved 650,144 GJ of energy, equivalent to 7.1% of the Group's total energy consumption, during the year. This translates to an estimated \$37 million in cost savings, and an avoidance of approximately 77,000 tonnes of carbon dioxide emissions. Cumulatively, the Group has saved over 2.3 million GJ of energy over the past five years, which translates to a total of about \$140 million in cost savings, and an avoidance of over 280,000 tonnes of carbon dioxide emissions over this period.

Keppel has also continued to promote the use of renewable energy. Keppel Offshore & Marine (Keppel O&M) and Keppel Infrastructure are collaborating on a solar leasing project at Keppel O&M's yards, where the renewable energy generated will help offset the yards' energy requirements. In addition, some of the renewable energy certificates generated through this initiative will be transferred to Keppel Corporation, allowing our corporate office at Keppel Bay Tower to be fully powered by clean energy starting from the end of 2018.

Our licence to operate requires us to act within clear legal and ethical boundaries. As we grow our business in this increasingly complex global landscape, we need to conduct ourselves according to the highest ethical standards. Last December, Keppel O&M reached a global resolution with criminal authorities in the US, Brazil and Singapore over the illegal payments made by Keppel O&M's former agent in Brazil, which were made with the knowledge or approval of former Keppel O&M executives. This brings closure to a painful chapter for Keppel. We have put in place significant enhancements to the compliance and internal controls systems across the Group to ensure that this does not happen again. The past practices uncovered do not reflect how Keppel conducts business today. We do not and will not tolerate any illegal activity in the conduct of our business, and are committed to winning business legally and ethically.

### Valuing Our Stakeholders

Our people are our most valuable asset. We respect and uphold human rights principles, adhere to fair employment practices, and are committed to nurture and empower a diverse, competent and dedicated talent pool to drive Keppel's

further growth. This year, we invested over 500,000 hours training our employees, including leveraging e-learning platforms for faster and better reach.

Keppel has a robust Health, Safety and Environment Policy, which all our employees and suppliers are expected to abide by. While we have made good progress in our safety journey, sadly, we lost three of our colleagues during the year. We have investigated these incidents thoroughly and rigorously, and instituted measures to prevent recurrence. We will soldier on in our efforts to ensure that everyone goes home safe, every day.

To integrate Keppel's sustainability principles across our supply chain, we established the Keppel Group's Supplier Code of Conduct at the end of 2016. 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. In 2017, close to 74% of our qualified suppliers signed the Code, and we are working towards bringing the other qualified suppliers on board.

Wherever we operate, we are focused on making a difference in the wider community, be it through working with the underprivileged, promoting education or caring for the environment.

Keppel Volunteers clocked about 12,000 hours of volunteer work in 2017, and brought cheer to more than 1,000 beneficiaries. Our outreach efforts have positively touched lives not only in Singapore, but in China, Vietnam, Indonesia and Brazil, among other countries. I would like to acknowledge and thank all our volunteers for their dedication.

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. The Foundation has disbursed close to \$30 million to worthy causes since its launch in 2012.

The Keppel Discovery Wetlands at the Singapore Botanic Gardens, restored with Keppel's contribution, was officially opened by Singapore's Prime Minister Lee Hsien Loong in March 2017. This restored and beautiful freshwater forest wetland in the heart of the city has attracted over 600,000 visitors so far.

### Shaping a Better Tomorrow

We are encouraged that our sustainability efforts have been internationally recognised. Keppel was awarded Best Workforce, and received Special Recognition for Strategy

and Sustainability Management, at the Sustainable Business Awards Singapore. We were also awarded the Sustainability Award at the Securities Investors Association Singapore 18th Investors' Choice Awards and conferred the title Champion of Good by the National Volunteer & Philanthropy Centre.

Keppel has been a part of the widely respected Dow Jones Sustainability Index for five consecutive years, and continued to be listed among the top 10 constituents of the Singapore Exchange's Environmental, Social and Governance (ESG) Indices – the SGX ESG Leaders Index and the SGX ESG Transparency Index. We are also listed on a number of other sustainability indices and rankings, including MSCI World ESG Leaders Index and Euronext Vigeo Eiris Index – World 120.

We are excited about the many opportunities presented by strong urbanisation trends across our businesses, and have made steps to position Keppel well for the future. In 2018, we established Keppel Technology & Innovation (KTI) to promote innovation and enterprise in the Group. Whether it is to develop new products and services, improve existing ones or to innovate and enhance business models and ways of working, KTI is a platform for all our business units and teams to co-create and incubate ideas towards tangible outcomes.

We are also grooming a new generation of employees who are committed to our core values and operating principles, and at the same time, are innovative, collaborative and nimble. We are harmonising our corporate and human resources systems, which will allow us to reap efficiencies and improve controls. We seek to create a conducive workplace where employees can explore, develop and fulfil their professional aspirations, and at the same time help Keppel achieve its mission to provide solutions for sustainable urbanisation.

Recognising business opportunities that help our company grow, while addressing societal challenges, will be vital to our long-term success. In collaboration with our stakeholders, we will stride forward in confidence to take Keppel to the next chapter.

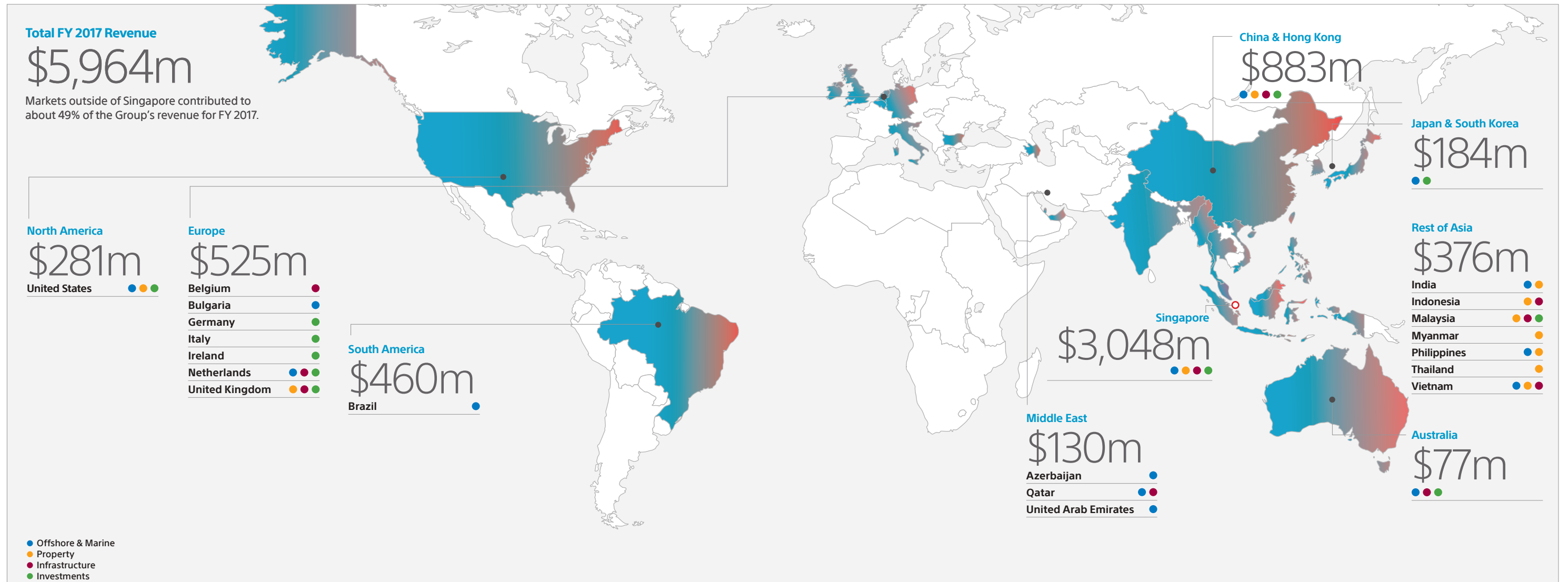


**Loh Chin Hua**  
Chief Executive Officer  
23 April 2018



# Global Presence

GRI 102-2 / 102-4 / 102-6 / 102-7



## Solutions for Sustainable Urbanisation

Keppel is an eco-system of companies working together to meet the world's needs for energy, urban living, clean environments, reliable infrastructure and connectivity.



### Driving Innovation

With a full suite of innovative designs, Keppel Offshore & Marine is meeting operators' demand for advanced and cost-efficient solutions.



### Shaping Cities of Tomorrow

Through Keppel Urban Solutions, we will harness the unique strengths of the Group to develop smart cities of the future.



### Improving Lives

We meet needs for quality urban living spaces through a pipeline of about 63,000 homes.



### Building Infrastructure

Drawing on our comprehensive energy and environmental solutions, we have the expertise and track record for developing, owning and operating a wide range of infrastructure assets.



### Connecting the World

With a portfolio of 18 quality data centres across Asia Pacific and Europe, we are meeting the needs of businesses for digital connectivity.



### Transforming Logistics

We offer end-to-end omnichannel logistics solutions to tap into the fast growing e-commerce and urban logistics sector.



### Creating Quality Assets

Keppel Capital connects investors with high-grade real assets in fast-growing sectors fuelled by urbanisation.

# Group Structure

GRI 102-5 / 102-7 / 102-45

## KEPPEL CORPORATION LIMITED

### Offshore & Marine

- Offshore rig design, construction, repair and upgrading
- Ship conversion and repair
- Specialised shipbuilding

KEPPEL OFFSHORE & MARINE LTD	100%
Keppel FELS Limited	100%
Keppel Shipyard Limited	100%
Keppel Singmarine Pte Ltd	100%
Keppel LeTourneau	100%
Keppel Nantong Shipyard Company Limited <i>China</i>	100%
Offshore Technology Development Pte Ltd	100%
Deepwater Technology Group Pte Ltd	100%
Marine Technology Development Pte Ltd	100%
Keppel AmFELS LLC <i>United States</i>	100%
Keppel FELS Brasil SA <i>Brasil</i>	100%
Keppel Philippines Marine Inc <i>The Philippines</i>	98%
Keppel Subic Shipyard Inc <i>The Philippines</i>	86%
Nakilat-Keppel Offshore & Marine Ltd <i>Qatar</i>	20%
Dyna-Mac Holdings Limited <sup>4</sup>	24%

### Property

- Property development
- Investments

KEPPEL LAND LIMITED	100%
Keppel Land International Limited <i>Southeast Asia and India</i>	100%
Keppel Land China <i>China</i>	100%
Keppel Bay Pte Ltd	100%
Keppel REIT <sup>4&amp;7</sup>	45%

### Infrastructure

- Energy infrastructure
- Environmental infrastructure
- Infrastructure services
- Investments
- Logistics and data centres

KEPPEL INFRASTRUCTURE HOLDINGS PTE LTD	100%
<b>ENERGY INFRASTRUCTURE</b>	
Keppel Gas Pte Ltd	100%
Keppel Electric Pte Ltd	100%
Keppel DHCS Pte Ltd	100%
Keppel Merlimau Cogen Pte Ltd <sup>5</sup>	49%
<b>ENVIRONMENTAL INFRASTRUCTURE</b>	
Keppel Seghers Pte Ltd	100%
<b>INFRASTRUCTURE SERVICES</b>	
Keppel Seghers Engineering Singapore Pte Ltd	100%
<b>INVESTMENTS</b>	
Keppel Infrastructure Trust <sup>4</sup>	18%
<b>KEPPEL TELECOMMUNICATIONS &amp; TRANSPORTATION LTD<sup>4</sup></b>	<b>79%</b>
<b>LOGISTICS &amp; DATA CENTRES</b>	
Keppel Logistics Pte Ltd	100%
Keppel Data Centres Holding Pte Ltd	100%
Keppel Logistics (Foshan) Pte Ltd <i>China</i>	70%
Keppel DC REIT <sup>3&amp;4</sup>	35%

### Investments

- Asset management
- Master development
- Investments

KEPPEL CAPITAL HOLDINGS PTE LTD	100%
Keppel REIT Management Limited	100%
Alpha Investment Partners Ltd	100%
Keppel Infrastructure Fund Management Pte Ltd	100%
Keppel DC REIT Management Pte Ltd <sup>6</sup>	50%
Keppel-KBS US REIT Management Pte Ltd	50%
Keppel-KBS US REIT <sup>4</sup>	7%
<b>KEPPEL URBAN SOLUTIONS PTE LTD</b>	<b>100%</b>
<b>KRISENERGY LTD<sup>4</sup></b> <i>Cayman Islands</i>	<b>40%</b>
<b>M1 LIMITED<sup>2 &amp; 4</sup></b>	<b>19%</b>
<b>SINO-SINGAPORE TIANJIN ECO-CITY INVESTMENT AND DEVELOPMENT CO., LTD<sup>1</sup></b> <i>China</i>	<b>50%</b>

### 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:

- 1 Owned by a Singapore Consortium, which is in turn 90%-owned by the Keppel Group.
- 2 Owned by Keppel Telecommunications & Transportation Ltd, a 79%-owned subsidiary of Keppel Corporation.
- 3 Owned by Keppel Telecommunications & Transportation Ltd (30%) and Keppel Land Limited (5%).
- 4 Public listed company.
- 5 Owned by Keppel Infrastructure Holdings Pte Ltd (49%) and Keppel Infrastructure Trust (51%).
- 6 Owned by Keppel Capital Holdings Pte Ltd (50%) and Keppel Telecommunications & Transportation Ltd (50%).
- 7 Owned by Keppel Land Limited (44%) and Keppel Capital Holdings Pte Ltd (1%).

Updated as at 7 March 2018. The complete list of subsidiaries and significant associated companies is available at [www.keppcorp.com](http://www.keppcorp.com).

# Sustainability Management

GRI 102-18 / 102-19 / 102-20 / 102-22 / 102-26 / 102-29 / 102-30 / 102-31 / 102-32

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

The Keppel Corporation Board and management regularly review as well as oversee the management and monitoring of the material Environmental, Social and Governance (ESG) factors of the Company, and take them into consideration in the determination of the Company's strategic direction and policies.

The Group Sustainability Steering Committee provides guidance on strategic and operational issues. The committee is chaired by Keppel Corporation's Chief Executive Officer 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.

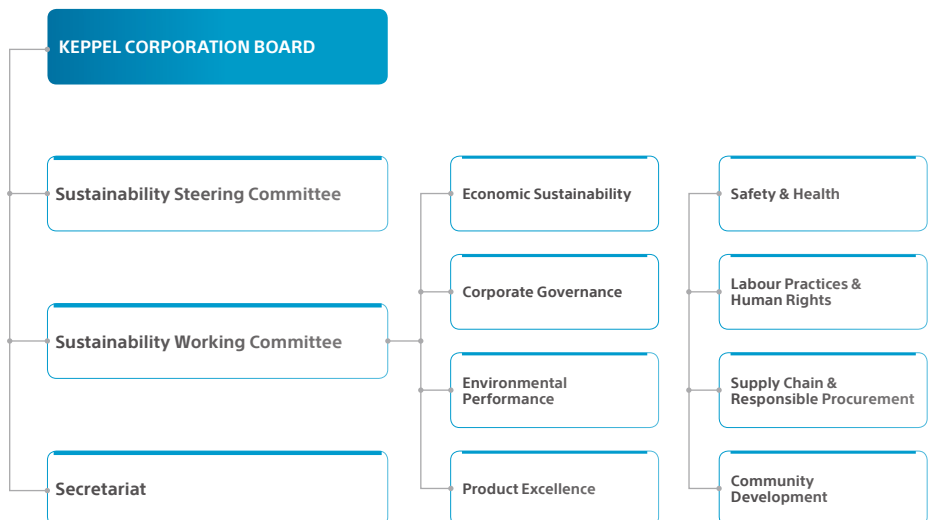
The Steering and Working Committees are supported by the Secretariat, sited in Group Corporate Communications, which facilitates reporting.

## 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

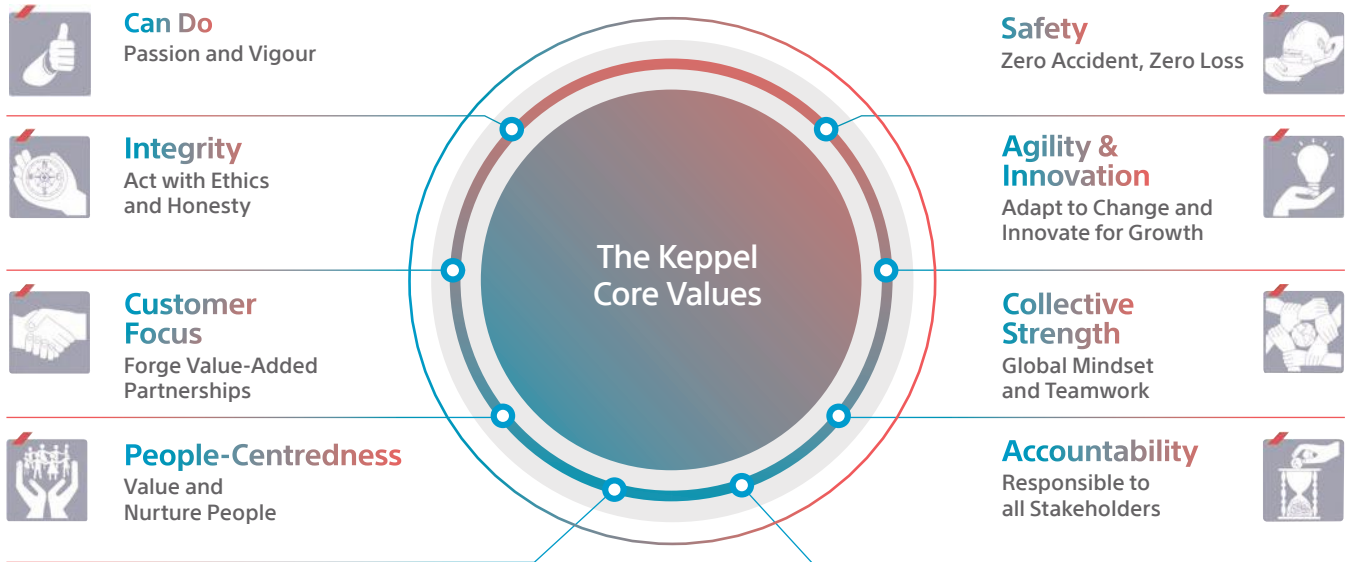




# Sustainability Management

## The Keppel Core Values

GRI 102-16



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 the Head of Group Risk and Compliance, Kevin Chng, who also leads the Group Risk and Compliance Committee.

As Head of the Group’s compliance function, Kevin Chng has a primary line of reporting to the Chairman of Keppel Corporation’s Board Risk Committee, with an administrative reporting line to Keppel Corporation’s Chief Financial Officer. 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

1. Keppel was conferred the title *Champion of Good* by the National Volunteer & Philanthropy Centre, which recognises companies that are exemplary in their corporate giving efforts. Presenting the award to Keppel was Finance Minister Heng Swee Keat (second from left).



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, and Managing Director of Keppel Urban Solutions. The committee sets targets, evaluates the effectiveness of our carbon management efforts, and monitors and reports on performance. It comprises representatives from business units, many of whom are certified energy managers.

Keppel Care Foundation coordinates philanthropic giving across the Group. The Foundation is governed by its own Board of Directors, and chaired by Lee Boon Yang, Chairman of Keppel Corporation.

**Materiality**

GRI 102-46

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 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.

In 2017, 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 also reviewed by the Steering Committee and Keppel Corporation's Board of Directors and deemed to remain relevant.

Our materiality assessments are based on principles of inclusivity, materiality and completeness.

**Keppel Corporation Material Issues**

GRI 102-47



# Highlights

Accolades

18th Securities Investors Association (Singapore) Investors' Choice Awards

## Sustainability Award



Accolades

Sustainable Business Awards 2017

## Best Workforce Award

And Special Recognition for Strategy and Sustainability Management.



# Driving Sustainability



Volunteerism

## 12,000hrs

Of community work achieved by Keppel Volunteers, an increase of 4,000 hours over the 8,000 hours in 2016.

Energy Savings

## \$37m

In estimated cost savings from our energy efficiency initiatives implemented in 2017 and Green Mark developments.



Sustainability Benchmarks

Singapore Exchange ESG Indices

## Top 10

Constituent of the SGX ESG Leaders Index and the SGX ESG Transparency Index.



Employee Engagement

## 87%

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

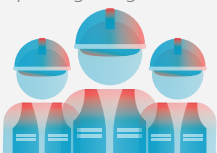


Accolades

Workplace Safety & Health Awards

## 36 Awards

The highest number of awards won by a single organisation this year.



Social Investments



## \$30m

Disbursed by Keppel Care Foundation to worthy causes since its launch in 2012.

Economic Value

## \$6.6b

Of economic value generated for our stakeholders.



# Performance Overview

## Performance Data

	2015	2016	2017	Interpretation	Page No.
<b>Environment (Singapore Operations)</b>					
Direct Energy (GJ)	738,935	7,166,393 <sup>1</sup>	7,149,190 <sup>1</sup>	■	43
Indirect Energy (GJ)	1,592,299	1,595,838	1,643,681	■	43
Potable Water Used (m <sup>3</sup> )	1,371,690	1,445,304	576,909	■	45
NEWater Used (m <sup>3</sup> )	2,370,696	2,586,318	2,622,096	■	45
Recycled Waste (t)	168,315	47,263	38,195	■	46
Incinerated Waste (t)	33,556	27,929	24,067	■	46
Direct Carbon Emissions (t-CO <sub>2</sub> )	663,557	1,031,948 <sup>1</sup>	838,666 <sup>1</sup>	■	47
Indirect Carbon Emissions (t-CO <sub>2</sub> )	175,165	191,189	193,615	■	47
<b>Safety</b>					
Accident Frequency Rate (Global) (reportable accidents per million man-hours)	0.13	0.15	0.10	■	63
Accident Severity Rate (Global) (man-days lost per million man-hours)	115	254	140	■	63
Accident Frequency Rate (Singapore) (reportable accidents per million man-hours)	0.09	0.16	0.12	■	63
Accident Frequency Rate (Overseas) (reportable accidents per million man-hours)	0.19	0.15	0.08	■	63
Accident Severity Rate (Singapore) (man-days lost per million man-hours)	54	132	96	■	63
Accident Severity Rate (Overseas) (man-days lost per million man-hours)	187	411	183	■	63
<b>Labour</b>					
Training Hours per Employee (Singapore)	27.2	29.8	22.9	■	72
Training Hours per Employee (Global)	23.2	25.3	22.6	■	72
Group Employee Turnover Rate (%)	8.9	12.3	13.4	■	74
Local Hires (%)	60.0	59.4	60.7	■	72
Senior Management Hired Locally (%)	60.3	60.3	66.9	■	72
<b>Community</b>					
Philanthropic Investments (\$million)	6.3	5.2	4.5	■	80

■ 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

GRI 102-12 / 102-15

## Keppel is committed to the international community's sustainable development agenda, and will leverage collaboration and partnership to support the global goals.

Keppel believes that businesses can play an important role in the achievement of the Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development. We firmly believe that a company that is aligned with the global sustainable development agenda can not only enhance its social licence to operate, but also improve the sustainability, efficiency and competitiveness of its business.

Having reviewed how our different businesses can contribute to each of the SDGs, we have incorporated the goals where appropriate, as a supporting framework to shape and guide our sustainability strategy. In this report, we share how different activities of the Keppel Group contribute towards ten of these goals.

### Building Sustainable Cities



Keppel's suite of solutions for energy, infrastructure, clean environments, high quality homes and offices, and connectivity can help countries maintain a balance between the trend of rapid urbanisation and the focus on sustainability.

More than half the world's population live in urban settlements and this number is projected to rise to 60% by 2030<sup>1</sup>. Buildings and construction together account for 36% of global final energy use and 39% of energy-related carbon emissions<sup>2</sup>. In addition, studies have shown that green buildings enhance occupant health, well-being and productivity, which in turn deliver business value for building owners and investors. It is therefore important to pay attention to the built environment.

The rapid deployment of energy-efficient and low-carbon solutions for buildings and construction can help put the world on a sustainable trajectory.

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 comply with 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. The company has garnered a total of 75 BCA Green Mark Awards to date (see pages 52 and 53).

Keppel Telecommunications & Transportation continues to focus on energy efficiency and reliability in its data centre portfolio. The company's data centre facilities in Singapore are certified with the Singapore Standard for Green Data Centres, and utilise a host of energy-efficient solutions to improve power usage effectiveness.

In 2017, Keppel Data Centres invested US\$10 million in Nautilus Data Technologies, a Californian startup currently developing a commercial water-cooled data centre, which will significantly increase cooling efficiency and reduce operating costs (see page 49). In the Logistics business, the company continues to harness technology, such as enhanced route planning, to minimise travelling distance and reduce fuel wastage.

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.

Keppel has a strong track record in large-scale urban development, and Keppel Urban Solutions (KUS) was established in 2017 to integrate the Group's different capabilities, and work with like-minded partners to capture opportunities in the urbanisation megatrend as a master developer of large-scale projects.

KUS' capabilities will be applied in its pilot project, Saigon Sports City, a 64-hectare township that Keppel Land is developing in the prime District 2 of Ho Chi Minh City, Vietnam. Saigon Sports City is envisaged to be a bustling hub, combining high-quality urban living with modern healthy lifestyle concepts.

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 urbanisation in other Chinese cities. Now into its 10th year of development,

the Eco-City has transformed from a barren, saline and alkaline site to an emerging green city, where over 80,000 people live and work. The Eco-City was named China's first National Green Development Demonstration Zone, first Integrated Smart-Grid Demonstration Zone and a National Green Building Base (see pages 58 and 59).

### Enhancing Access to Clean Energy



The demand for energy will grow as cities continue to undergo urbanisation. Solutions in our energy portfolio focus on enhancing access to energy. With climate change as a growing international concern, demand for cleaner sources of energy such as Liquefied Natural Gas (LNG) is expected to rise. LNG is considered to be one of the safest and cleanest fossil fuels available, and offers significant potential for industries to reduce GHG emissions.

As one of the world's leaders in LNG vessel repair, Keppel Offshore & Marine (Keppel O&M) has built up critical knowledge for handling materials at extremely low temperatures. This experience, coupled with a strong track record in oil and gas projects, has enabled Keppel to achieve many firsts in the delivery of LNG solutions, including completing the world's first FLNG vessel conversion, Hilli Episeyo, for Golar LNG. Our ability to offer end-to-end solutions has also primed Keppel to meet rising demand for LNG in archipelagic markets unserved by gas pipelines. In 2017, Keppel O&M signed a Heads of Agreement with Pavilion Energy and PLN to explore the development of small-scale LNG solutions for West Indonesia. Keppel O&M's value proposition extends beyond a typical engineering, procurement and construction shipyard. With the ability to design, develop and integrate solutions across the gas value chain, Keppel is poised to be the gas industry's preferred partner and enabler.

Keppel Infrastructure's Energy Infrastructure Division provides competitive energy solutions and services across the natural gas value chain through its subsidiaries Keppel Merlimau Cogen, Keppel Electric,

<sup>1</sup> United Nations, Department of Economic and Social Affairs, Population Division (2016). The World's Cities in 2016 - Data Booklet (ST/ESA/SER.A/392).

<sup>2</sup> OECD/IEA (2017), Energy Technology Perspectives 2017.

Keppel Gas, Pipenet and Keppel DHCS. The Keppel Merlimau Cogen plant uses natural gas to generate electricity. Gas-fired plants have significantly lower carbon emissions than oil-fired steam plants.

Keppel has continued to promote the use of renewable energy. The Keppel DHCS district cooling system plant at Changi Business Park and the Keppel Seghers Ulu Pandan NEWater Plant feature rooftop solar power installations that are among the largest in Singapore. The Keppel DHCS plant in the Eco-City also taps geothermal energy to supplement the plant's energy needs. In addition, Keppel O&M and Keppel Infrastructure are currently collaborating on a solar leasing project at Keppel O&M's yards, where the renewable energy generated will help offset the yards' energy requirements. Some of the renewable energy certificates generated through this initiative will be transferred to Keppel Corporation, allowing our corporate office at Keppel Bay Tower to be fully powered by clean energy starting from the end of 2018.

### Innovating Water & Waste Management Technology



Keppel Infrastructure taps the advanced technology solutions of its subsidiary, Keppel Seghers, to address a wide spectrum of environmental issues in solid waste and wastewater management. With a strong track record in implementing water and waste management projects 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 2017, Keppel Seghers and Zhen Hua Engineering jointly secured a contract to design, build and operate Hong Kong's first Integrated Waste Management Facility (IWMF). The landmark project will play a key role in Hong Kong's waste management strategy. In China, Keppel Seghers also continued to build on its track record as a leading imported WTE technology solutions provider. It secured two contracts in 2017, bringing its technology packages under execution in China to nine projects with a total incineration capacity of close to 16,500 tonnes per day.

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 (DNSTW), which recycles wastewater and treats sludge for agricultural reuse, and the Domestic Solid Waste Management Centre, which treats municipal waste to generate green energy. The DNSTW received regional accolades including the GCC Award for Sustainability and the GCC Water Project of the Year at the MEED Quality Awards 2017.

In 2017, Keppel Infrastructure commenced construction for Singapore's first large-scale dual-mode desalination plant, the Keppel Marina East Desalination Plant, which is able to treat both seawater and freshwater. Slated for completion in 2020, the Plant will help bolster Singapore's water supply resilience.

### Valuing Our People



Our businesses spark economic growth, productivity and jobs. In 2017, Keppel's businesses generated \$6.6 billion in economic value. This includes revenue, interest and investment income, and disposal gains. Over \$1 billion was paid out in employee wages and benefits, and \$322 million was paid to governments in the form of income taxes.

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

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

### Improving Occupational Safety & Health



Safety is a core value at Keppel, and an integral part of our business. We are committed to provide a safe and healthy workplace for all our stakeholders, and focus on strengthening our frameworks

and management systems as well as promoting a culture of safety ownership across our operations.

In 2017, we invested approximately \$28 million in enhancing safety infrastructure, upgrading systems and building knowledge and skillsets across the Group. We also support national and industry-related initiatives to raise safety standards, and members of Keppel's management team sit on various committees of the Workplace Safety and Health (WSH) Council and related industry associations. Keppel has been a regular sponsor of annual national safety events, including the 2017 edition of the WSH Awards.

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. Keppel Land's Safety Awareness Centres in Ho Chi Minh City, Vietnam; Johor Bahru, Malaysia; and Jakarta, Indonesia, provide mandatory training for contractors' employees and promote a culture of safety across Keppel Land's supply chain. Keppel Land opened its first Safety Awareness Centre in Tianjin, China, in 2017. The centre is the first in China to be built by a developer.

### Ensuring Compliance



Given the geographical diversity of our businesses, we closely monitor developments in the laws and regulations of 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 to laws and regulations. We recognise that non-compliance with laws and regulations not only has significant financial impact but potentially detrimental reputational impact on the Group. We are fully committed to strengthening our regulatory compliance framework. Our emphasis is clear and consistently reiterated. We have zero tolerance for fraud, bribery, corruption and violation of laws and regulations.

During the year, we continued to make significant progress on our regulatory compliance initiatives, ensuring that compliance principles are embedded in our activities and implementing best practices from industry leaders as we develop and strengthen our compliance framework (see Keppel Corporation's Report to Shareholders 2017 pages 75 to 77).



## Sustainable Development Goals

Keppel firmly believes that a company that is aligned with the global sustainable development agenda can not only enhance its social licence to operate, but also improve the sustainability, efficiency and competitiveness of its business. We have incorporated the Sustainable Development Goals, where appropriate, as a supporting framework to shape and guide our sustainability strategy.

### 3 GOOD HEALTH AND WELL-BEING



Providing a safe and healthy working environment for all stakeholders is fundamental to our commitment to conduct business responsibly. We are strong advocates for safety and health in the broader community, and champion national and industry initiatives to raise standards and drive innovation in these aspects.



### 6 CLEAN WATER AND SANITATION



Our advanced technology solutions address a wide spectrum of environmental issues in solid waste and wastewater management, as well as seawater and freshwater treatment to bolster water supply resilience.

### 7 AFFORDABLE AND CLEAN ENERGY



We enhance access to energy with our diverse portfolio of solutions. Our delivery of the world's first Floating Liquefied Natural Gas vessel conversion puts us ahead of the curve as a leading provider of floating liquefaction solutions.



### 8 DECENT WORK AND ECONOMIC GROWTH



Our businesses spark economic growth, productivity and jobs. Our hiring policies ensure equal employment opportunities for all, and we are committed to invest in nurturing our human capital.

### 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



We are committed to operating sustainably, and apply our people and our technology to drive innovation and support economic development and the well-being of our communities.



### 11 SUSTAINABLE CITIES AND COMMUNITIES



Our businesses help promote sustainable urbanisation. We offer solutions for property, infrastructure, technology and services that optimise urban systems and contribute towards resilient, green and liveable cities.

### 12 RESPONSIBLE CONSUMPTION AND PRODUCTION



We are focused on achieving sustainable management and efficient use of natural resources. We aim to reduce waste generation through resource efficiency, recycling, and reuse of natural resources.



### 13 CLIMATE ACTION



We are committed to minimising our environmental impact. To support the climate change agenda, we have set a target of achieving a 28.8% reduction in carbon emissions intensity by 2030 from 2010 levels, in addition to the target of achieving a 16% improvement in carbon emissions from 2020 business-as-usual levels.

### 16 PEACE, JUSTICE AND STRONG INSTITUTIONS



We will conduct business the right way and comply with all applicable laws and regulations wherever we operate. Our tone on regulatory compliance is clear and consistently reiterated from the top of the organisation. We have zero tolerance for fraud, bribery, corruption and violation of laws and regulations.

### 17 PARTNERSHIPS FOR THE GOALS



Through collaboration with our stakeholders, we mobilise and share knowledge, expertise, technology and financial resources to support the achievement of the SDGs.



# Sustainability Strategy

GRI 102-12 / 102-16

Key Thrusts	Performance Highlights
<p><b>Sustaining Growth</b></p> <p>Our commitment to business excellence is driven by our unwavering focus on strong corporate governance and prudent risk management.</p> <p>Resource efficiency is our responsibility and makes good business sense.</p> <p>Innovation and delivering quality products and services sharpen our competitive edge.</p>	<ul style="list-style-type: none"> <li>Delivered 10 major Offshore &amp; Marine projects including the world's first floating liquefaction vessel conversion for Golar LNG, and secured about \$1.2 billion of non-drilling contracts.</li> <li>Signed a Heads of Agreement with Pavilion Energy and Indonesia's PLN to develop small-scale liquefied natural gas infrastructure.</li> <li>Announced investments of about \$1.6 billion and divestments of more than \$1.0 billion in the Property Division as part of a proactive capital recycling strategy.</li> <li>Sold over 5,480 homes with a total sales value of about \$2.8 billion.</li> <li>Secured a contract to design, build and operate Hong Kong's first Integrated Waste Management Facility and commenced construction of Keppel Marina East Desalination Plant in Singapore.</li> <li>Raised over US\$1.5 billion of property and data centre funds under Keppel Capital, and listed Keppel-KBS US REIT on the Singapore Exchange.</li> <li>Established Keppel Urban Solutions as a master developer of large-scale urban developments.</li> <li>Delivered targeted training focused on line manager responsibilities in setting the tone for compliance, and extended the scope of the annual e-training and declaration of Group policies exercise.</li> <li>Reviewed, enhanced and published key compliance policies.</li> <li>Invested in innovative technologies and designs to provide more sustainable and efficient solutions.</li> <li>Progressively adopted clean energy to power our facilities where possible.</li> </ul>
<p><b>Empowering Lives</b></p> <p>People are the cornerstone of our businesses.</p> <p>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.</p> <p>We want to instil a culture of safety so that everyone who comes to work goes home safe.</p>	<ul style="list-style-type: none"> <li>Achieved a reduction in Accident Frequency Rate (AFR) compared to 2016 levels.</li> <li>Harmonised safety standards for high risk activities in all our global operations.</li> <li>Standardised incident investigation and root cause analysis technique for the Group.</li> <li>Conducted the Keppel Global Employee Engagement Survey, where 87% of employees surveyed indicated that they will "go beyond the norm" to contribute to Keppel's success.</li> <li>Recorded an average of 22.6 hours of training per employee per year.</li> <li>Initiated the <i>InnovateKeppel</i> programme, a key pillar of Keppel Technology &amp; Innovation, that focuses on developing and harnessing the capabilities of our workforce to build innovation capacity.</li> </ul>
<p><b>Nurturing Communities</b></p> <p>As a global citizen, Keppel believes that as communities thrive, we thrive.</p> <p>We engage and nurture communities wherever we are, with the aim of achieving a sustainable future together.</p> <p>As leaders in our businesses, we support industry initiatives and encourage open dialogue to promote growth.</p>	<ul style="list-style-type: none"> <li>Sponsored and participated in a wide range of community initiatives, investing \$4.5 million in social causes.</li> <li>Achieved about 12,000 hours of community service, an increase of 4,000 hours over the 8,000 hours in 2016.</li> <li>Renewed partnership with Esplanade – Theatres on the Bay for Keppel Nights.</li> </ul>

Strategic Focus/Targets
<ul style="list-style-type: none"> <li>Strengthen our core businesses and collaborate on new opportunities, unleashing synergies from Keppel's multi-business model to achieve our financial, people, stakeholder and process goals.</li> <li>Build new engines for growth through innovation and technology.</li> <li>Sharpen project execution through continuous improvements in productivity and efficiency.</li> <li>Focus on enhancing risk management, compliance and controls.</li> <li>Enhance people development and bolster bench strength through talent management and succession planning.</li> <li>Maintain strong financial discipline, seize opportunities to recycle assets, and deploy capital astutely for the best risk-adjusted returns.</li> <li>Achieve a 28.8% reduction in carbon emissions intensity by 2030 from 2010 levels, in addition to the target of a 16% improvement in carbon emissions from 2020 business-as-usual levels.</li> </ul>
<ul style="list-style-type: none"> <li>Execute our Zero Fatality Strategy and reduce workplace fatalities to zero.</li> <li>Reduce AFR compared to 2017 levels.</li> <li>Implement an electronic global HSE management system to streamline data capture, analyse data, and develop intervention programmes.</li> <li>Continue to conduct the Keppel Global Employee Engagement Pulse Survey to track and sustain employee engagement levels.</li> <li>Continue to promote diversity and equal opportunity in the workplace.</li> <li>Further develop our workforce through tech-enabled and self-paced training programmes.</li> </ul>
<ul style="list-style-type: none"> <li>Achieve over 10,000 hours of staff volunteerism worldwide.</li> <li>Support initiatives to promote the social development of local communities where we operate.</li> </ul>

Supporting 10 Relevant SDGs
<p>3 GOOD HEALTH AND WELL-BEING</p> 
<p>6 CLEAN WATER AND SANITATION</p> 
<p>7 AFFORDABLE AND CLEAN ENERGY</p> 
<p>8 DECENT WORK AND ECONOMIC GROWTH</p> 
<p>9 INDUSTRY INNOVATION AND INFRASTRUCTURE</p> 
<p>11 SUSTAINABLE CITIES AND COMMUNITIES</p> 
<p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p> 
<p>13 CLIMATE ACTION</p> 
<p>16 PEACE, JUSTICE AND STRONG INSTITUTIONS</p> 
<p>17 PARTNERSHIPS FOR THE GOALS</p> 





# United Nations Global Compact Principles

GRI 102-12



We are committed to upholding the United Nations Global Compact’s 10 principles on human rights, labour, environment and anti-corruption.

## Index according to the 10 Principles of the United Nations Global Compact

Principle	Systems	Principle	Systems
 <p><b>HUMAN RIGHTS</b>  <b>Principle 1</b>                      Support of human rights</p> <p><b>Principle 2</b>                      Exclusion of human rights abuses</p>	<p>Keppel upholds and respects the fundamental principles set out in the 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.</p> <p>Our commitment to human rights is supported by our Employee Code of Conduct, which sets the tone in relation to the Group’s stance against discrimination on any basis. Our stance on human rights is articulated in our Corporate Statement on Human Rights which is publicly available online.</p> <p>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.</p> <p>Our suppliers are expected to abide by the Keppel Supplier Code of Conduct, which holds them accountable to responsible labour practices in their operations.</p> <p>Unions are our partners and we place great emphasis on maintaining a harmonious relationship. Approximately 33.6% of our global workforce are bargainable employees covered by Collective Agreements.</p> <p>In Singapore, Keppel adheres to the Tripartite Guidelines on Fair Employment Practices and endorses the Employers’ Pledge of Fair Employment Practices.</p> <p>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 are reviewed regularly.</p> <p><a href="#">See Suppliers, pages 22 and 23.</a>  <a href="#">See Labour Practices &amp; Human Rights, pages 68 to 77.</a></p>	 <p><b>ENVIRONMENT</b>  <b>Principle 7</b>                      Precautionary approach to environmental challenges</p> <p><b>Principle 8</b>                      Initiatives to promote greater environmental responsibility</p> <p><b>Principle 9</b>                      Development and diffusion of environmentally friendly technologies</p>	<p>The Keppel Corporation Board and management regularly review as well as oversee the management and monitoring of the material Environmental, Social and Governance factors of the Company, and takes them into consideration in the determination of the Company’s strategic direction and policies.</p> <p>The Group’s risk-based strategies are used to assess, avoid, reduce and mitigate environmental risks and impacts. Our focus areas are enhancing energy efficiency, managing water and waste, reducing our carbon emissions and improving our environmental management systems.</p> <p>As a solutions provider for sustainable urbanisation, Keppel Corporation pledges its commitment to support efforts by the international community and the Singapore government in tackling climate change.</p> <p>Most of our key business units are certified to the ISO 14001 Environmental Management System standard, which guides how we identify, manage, monitor and control environmental issues.</p> <p>Carbon management receives oversight by the Group’s Energy Efficiency Committee, which sets targets, evaluates the effectiveness of our carbon management efforts, and monitors and reports on performance.</p> <p>Keppel aims to achieve a 16% improvement in carbon emissions from 2020 business-as-usual levels, which we measure based on carbon emissions intensity. In addition, Keppel aims to achieve a 28.8% reduction in carbon emissions intensity by 2030, from 2010 levels, in our global operations.</p> <p><a href="#">See Environmental Management, pages 40 to 49.</a></p>
 <p><b>LABOUR</b>  <b>Principle 3</b>                      Assurance of freedom of association</p> <p><b>Principle 4</b>                      Elimination of all forms of forced and compulsory labour</p> <p><b>Principle 5</b>                      Abolition of child labour</p> <p><b>Principle 6</b>                      Elimination of discrimination</p>	<p>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 are reviewed regularly.</p> <p><a href="#">See Suppliers, pages 22 and 23.</a>  <a href="#">See Labour Practices &amp; Human Rights, pages 68 to 77.</a></p>	 <p><b>ANTI-CORRUPTION</b>  <b>Principle 10</b>                      Measures against corruption</p>	<p>Our Regulatory Compliance Governance Structure is designed to strengthen our corporate governance. The Board Risk Committee supports the Board in its oversight of regulatory compliance and is responsible for driving the Group’s focus on implementing effective compliance and governance systems.</p> <p>The Group Regulatory Compliance Management Committee is chaired by Keppel Corporation’s Chief Executive Officer and its members includes all business unit heads. The Committee articulates the Group’s commitment to regulatory compliance, directs and supports the development of over-arching compliance policies and guidelines, and facilitates the effective implementation of policies and procedures across the Group.</p> <p><a href="#">See Corporate Governance, pages 28 to 34.</a>  <a href="#">See Risk Management, pages 34 to 37.</a>  <a href="#">See Regulatory Compliance, pages 38 to 39.</a></p>

## Awards & Recognition



### Sustainable Business Awards Singapore

Keppel Corporation was conferred the Best Workforce award and received Special Recognition for Strategy and Sustainability Management at the Sustainable Business Awards 2017. The Awards, organised by Global Initiatives in partnership with PwC Singapore, recognise businesses with sustainable business practices.

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

At the 18th SIAS Investors' Choice Awards, Keppel Corporation won the inaugural Sustainability Award and was named runner-up in the large-cap category for the Singapore Corporate Governance Award.

MEMBER OF

**Dow Jones  
Sustainability Indices**

In Collaboration with RobecoSAM

### Dow Jones Sustainability Indices

Keppel Corporation was listed as an index component of the DJSI Asia Pacific Index for the fifth 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.



### MSCI World ESG Leaders Index

Keppel Corporation was listed as a constituent of the MSCI World ESG Leaders Index<sup>1</sup> (formerly MSCI Global Sustainability Index) for the fourth consecutive year. The index comprises companies with high environmental, social and governance (ESG) ratings relative to their regional sector peers.



### Singapore Exchange Sustainability Indices

Keppel Corporation continued to be listed among the top 10 constituents of both SGX ESG Indices – the SGX ESG Leaders Index (formerly SGX Sustainability Leaders Enhanced Index) and the SGX ESG Transparency Index (formerly SGX Sustainability Enhanced Index). The SGX ESG Indices are composed of SGX-listed stocks that are considered sustainability leaders.

<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 Indices are the exclusive property of MSCI. MSCI and the MSCI Index names and logos are trademarks or service marks of MSCI or its affiliates.



### Euronext Vigeo Eiris Index-World 120

Keppel Corporation was listed as an index component of the Euronext Vigeo Eiris – World 120 Index for the fifth 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 Eiris – World 120 Index is composed of 120 of the highest-ranking listed companies globally in terms of performance in corporate responsibility.

### Singapore Corporate Awards

Keppel Corporation clinched a Bronze Award at the 12th Singapore Corporate Awards, in the Best Annual Report Category. The awards, jointly organised by the Institute of Singapore Chartered Accountants, Singapore Institute of Directors (SID) and The Business Times, recognise exemplary corporate disclosure standards and corporate governance practices among listed companies in Singapore.

### Singapore Governance and Transparency Index

Keppel Corporation ranked fifth in the general category of the SGTI 2017. The index is a joint initiative by CPA Australia, National University of Singapore Business School's Centre for Governance, Institutions and Organisations, and SID.



### Workplace Safety & Health Awards

The Keppel Group was conferred 36 awards at the WSH Awards 2017 organised by Singapore's Ministry of Manpower and the WSH Council. This is the largest number of awards won by a single organisation in 2017. The annual awards recognise organisations and individuals who have contributed to achieving excellence in workplace safety and health.



### Champion of Good

Keppel was conferred the title Champion of Good, a national recognition framework under the Company of Good programme by Singapore's National Volunteer & Philanthropy Centre.

### Patron of the Arts Award

Keppel Corporation was conferred the Distinguished Patron of the Arts Award by Singapore's National Arts Council for the 10th consecutive year. The award recognises organisations which have contributed significantly towards the development of the arts.

# Stakeholder Engagement

GRI 102-21 / 102-42

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

Collaboration with stakeholders supports us in addressing sustainability challenges. We promote ongoing communication and active engagement with our 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

GRI 102-13

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

- United Nations (UN) Global Compact as a Signatory, and Global Compact Network Singapore as a member, to express commitment to the 10 principles of the Global Compact and support broader UN goals;
- 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;
- 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;
- Singapore Institute of International Affairs to deepen understanding and forge stronger partnerships between countries in the region.



1. Analysts were taken on a tour of the world’s first-of-its-kind converted FLNG vessel, *Hilli Episeyo*, prior to its delivery.



## Our Stakeholders

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

### Employees



We are 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 shape 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; training, including e-training; 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, and we leverage 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; setting industry benchmarks.

#### Approach

Official visits and meetings; industry forums.



### Shareholders



Shareholders play an important role in the financing and governance 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; briefings to retail shareholders; facility visits; 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 active members 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.





# Suppliers

## Targets

- Further refine the implementation of the Supplier Code of Conduct.
- Work with suppliers to improve performance in accordance with best practices.

## Suppliers Screened

100%

Of all new suppliers were screened in accordance with environmental and social criteria.



SDGs highlighted in this section



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

### Management Approach

GRI 102-10 / 103-1 / 103-2 / 103-3 / 308-1 / 414-1

The 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.

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 workforce in our host countries.

All suppliers are qualified in accordance with our requisition and purchasing policies, and screened based on environmental and social criteria. We review potential suppliers' industry reputation, track record, financial performance, security practices and certifications, whereby suppliers with certifications for ISO 9001

Quality Management System, ISO 14001 Environmental Management System, OHSAS 18001 Occupational Health & Safety Management System or equivalent are preferred.

We further established the Keppel Supplier Code of Conduct at the end of 2016 to integrate Keppel's sustainability principles across our supply chain. The Code is currently available in English, Chinese and Portuguese.

All new suppliers that provide Keppel with products and services valued at \$200,000 or more per contract or over cumulative purchase orders in the prior calendar year are expected to sign and abide by the Code, which covers areas pertaining to business conduct, labour practices, safety and health, and environmental management. All Group companies are required to include the acknowledgment and signing of the code as part of their supplier selection procedure.

## Our Supply Chain

GRI 102-9

### Division

### Description

#### Offshore & Marine

Subcontractors work closely with Keppel O&M 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; as well as process equipment such as generators, cryogenic systems, switchgears and variable control systems. We also procure shipyard-specific equipment such as cranes, forklifts, transporters and panel line systems.

Bulk material suppliers supply us with fuel, which includes petrol, diesel, furnace oil and Liquefied Petroleum Gas, as well as steel plates, steel profiles, cables, piping, grit and paint.

#### Property

Consultants, contractors, and interior design firms 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.

#### Infrastructure

Subcontractors 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.

#### Data Centres and Logistics

Keppel Data Centres engages contractors for the construction of new data centre facilities, and facility technicians for regular equipment maintenance. Subcontractors are engaged for transportation services and warehouse operations in the Logistics Division. A subsidiary of the division, UrbanFox, engages crowdsourced drivers for last-mile delivery services through an online platform.

#### Investments

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 property and facility management companies that provide building management, physical security, technical maintenance and routine cleaning services.

In 2017, close to 74% of qualified suppliers signed the Code<sup>1</sup>. Group companies are working to bring the remaining qualified suppliers on board.

Third-party associates of the Group that provide services on behalf of a Group company 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.

As a participant of the Marine Sponsorship Scheme by Singapore's Ministry of Manpower (MOM), Keppel Offshore & Marine (Keppel O&M) goes the extra mile to ensure that its appointed resident subcontractors adhere to MOM requirements for the employment of both local and foreign employees. These requirements cover various aspects of labour welfare including fair remuneration practices, migrant workforce living standards and workplace safety. As part of its routine enforcement, Keppel O&M conducts monthly interviews with workers from all resident

subcontractor companies on a rotational basis to determine the levels of satisfaction on the forementioned aspects, and immediately addresses non-performance by the management of these resident subcontractor companies.

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.

Keppel Land also conducts regular site visits and internal audits as part of its supplier due diligence process. When lapses are

identified, the company's project team works closely with contractors to implement corrective action plans and preventive measures.

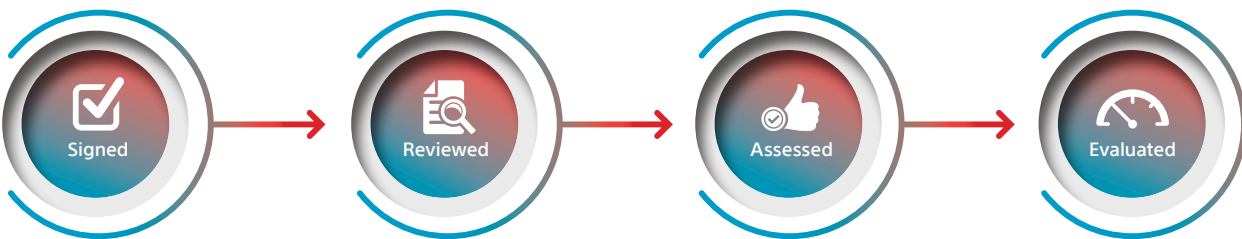
**Engaging Suppliers**

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

Forums and dialogue sessions with contractors are held regularly to ensure alignment in Health, Safety and Environment (HSE) objectives, and to share our experience and standards. Our business units also have incentive programmes that reward and recognise contractors with exemplary HSE performance.

<sup>1</sup> While Keppel Capital implemented the Keppel Supplier Code of Conduct at the end of 2016, it only introduced its threshold for suppliers in 2018. 2017 data for this business unit has been excluded from the report, and will be included from next year onwards.

**Selection Process for New Suppliers**



**Stage 1**

All new suppliers that provide Keppel with products and services valued at \$200,000 or more per contract or over cumulative purchase orders in the prior calendar year are expected to sign and abide by the Keppel Supplier Code of Conduct.

**Stage 2**

All suppliers are qualified in accordance with our requisition and purchasing policies and screened based on environmental and social criteria. We review potential suppliers' industry reputation, track record, financial performance, security practices and certifications.

**Stage 3**

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.

**Stage 4**

Regular reviews and assessment of supplier performance, with an emphasis on our subcontractors, including performance in relation to topics covered in the Supplier Code of Conduct. This includes document reviews and site visits to ensure satisfactory service quality and HSE standards.

# Economic Sustainability

GRI 102-7

## Major Developments in 2017

### Offshore & Marine

Streamlined the operations of Keppel Offshore & Marine into the New Builds and Conversions & Repairs divisions.

Delivered 10 major projects safely, on time and on budget, including the world's first Floating Liquefied Natural Gas vessel conversion for Golar LNG.

Secured about \$1.2 billion worth of new contracts mainly for non-drilling solutions.

Signed Heads of Agreement with Pavilion Energy and PLN to explore small-scale LNG solutions for West Indonesia.

### Property

Sold about 5,480 homes in Asia, mostly in China and Vietnam.

More than \$1 billion worth of divestments announced, including assets in China and Indonesia.

Announced nine acquisitions worth about \$1.6 billion across Singapore, China, Vietnam, Indonesia and Thailand.

### Infrastructure

Signed an agreement with the Singapore Economic Development Board to develop, own and operate a gasification facility in Singapore, an important step in preparation for the final investment decision.

Secured a contract to design, build and operate Hong Kong's first Integrated Waste Management Facility and commenced construction of Keppel Marina East Desalination Plant in Singapore.

Secured two waste-to-energy technology and services contracts in China.

Injected Keppel DC Singapore 4 into the Alpha DC Fund.

Launched UrbanFox to offer end-to-end omnichannel logistics solutions.

### Investments

Established Keppel Urban Solutions, an end-to-end master developer of urban developments.

Keppel REIT acquired an interest in the new office tower to be developed at 311 Spencer Street in Melbourne, Australia.

Keppel-KBS US REIT listed on the Singapore Exchange with approximately US\$553 million raised.

Keppel DC REIT expanded with the addition of two data centres in Singapore and Dublin.

Alpha Investment Partners raised US\$1 billion for the Alpha Data Centre Fund and US\$560 million for the Alpha Asia Macro Trends Fund III.







**Economic Value Generated by Keppel**

**\$6,613m**

This includes revenue, interest and investment income, and disposal gains.

**Total Assets**

**\$28.1b**

Value of the Keppel Group's total assets as at end-2017.



SDGs highlighted in this section



In 2017, we continued to deliver on our multi-business strategy, entering into new markets and establishing new vehicles and engines for growth.

**Overview**

Today, more than half of the world's population live in urban areas. According to estimates by the United Nations, urban areas are projected to house 60% of people globally by 2030<sup>1</sup>.

We live in a rapidly changing and evolving world. Growing digitalisation, advances in artificial intelligence and robotics, will redefine the way people live, work, play, and interact with one another. Companies must likewise adapt to the changing environment to stay relevant and ahead of competitors.

Strong urbanisation growth presents a multitude of opportunities for businesses. At the same time, new disruptive technology and business models are shaking up long-standing businesses, and threaten to derail others.

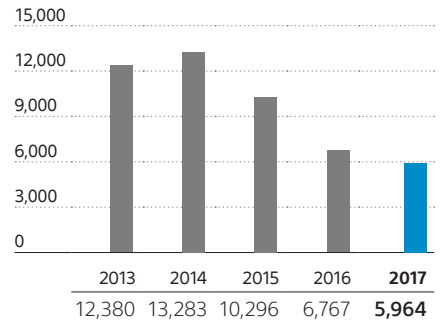
Amidst these trends, Keppel strives to become a stronger, more innovative and more sustainable company, with different business units collaborating to harness synergies in providing solutions for sustainable urbanisation.

**Management Approach**

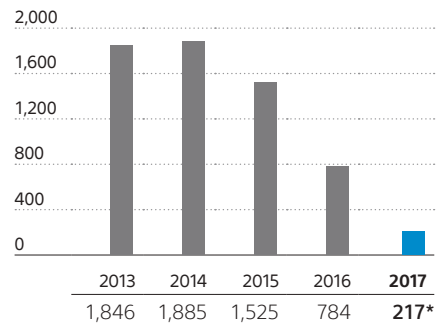
GRI 102-10 / 103-1 / 103-2 / 103-3

Keppel has a distinct blend of competencies and leverages its international network, resources and talents to provide solutions

**Revenue (\$m)**



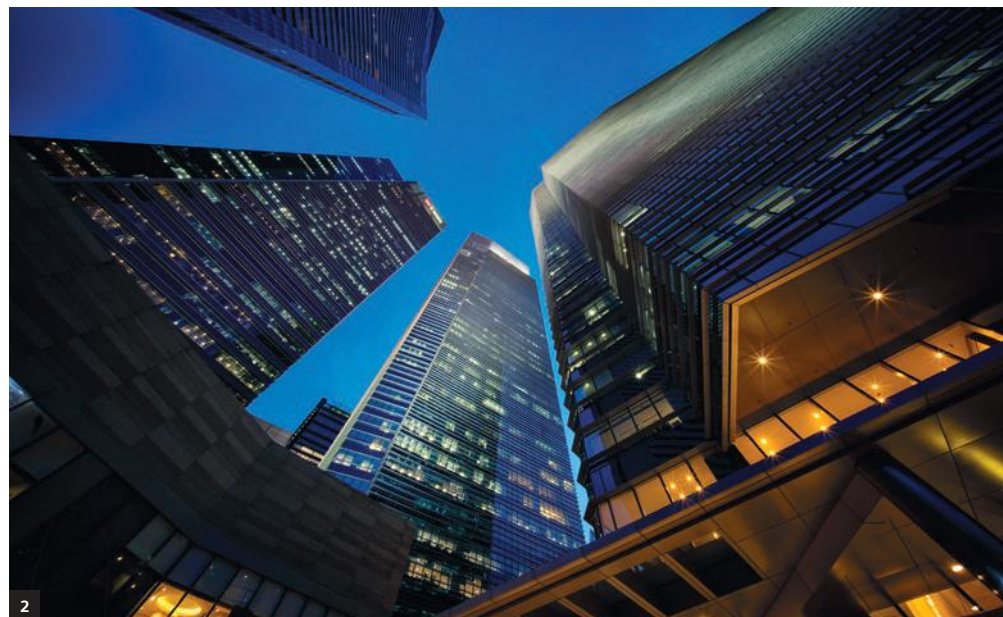
**Net Profit (\$m)**



\* Including one-off financial penalty from the global resolution and related costs of \$619 million.

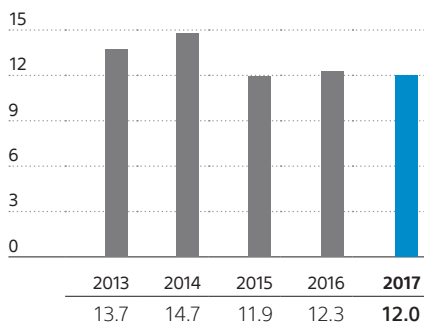
<sup>1</sup> United Nations, Department of Economic and Social Affairs, Population Division (2016), The World's Cities in 2016.

1. As its pilot project, Keppel Urban Solutions is collaborating with Keppel Land to develop the 64-hectare Saigon Sports City in Ho Chi Minh City, Vietnam.
2. Keppel shapes urban skylines with its suite of award-winning live-work-play developments.

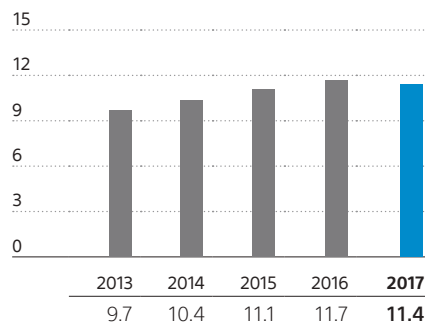


## Economic Sustainability

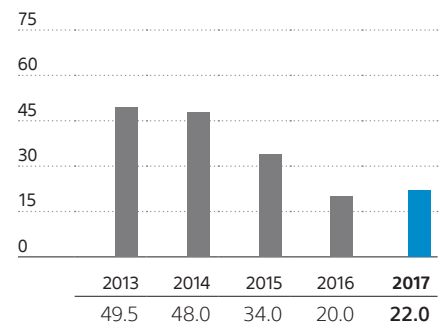
### Total Equity (\$b)



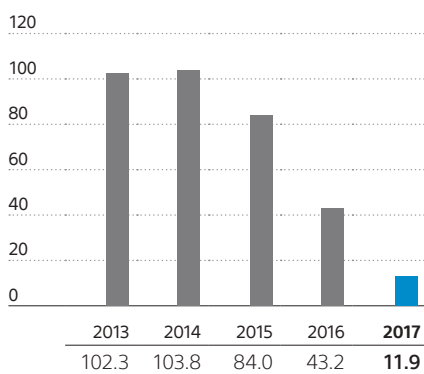
### Shareholders' Funds (\$b)



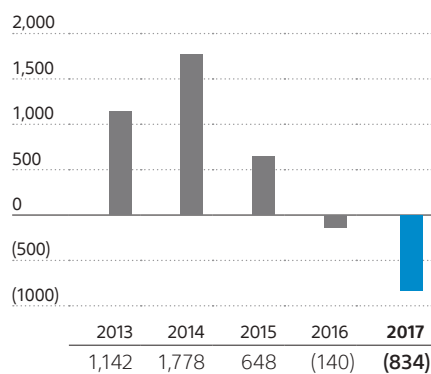
### Total Distribution Per Share (cents)



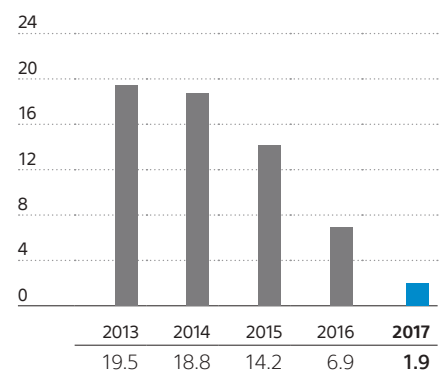
### Earnings Per Share (cents)



### Economic Value Added (\$m)



### Return On Equity (%)



\* Including one-off financial penalty from the global resolution and related costs of \$619 million.

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 are working our capital harder to seek the best possible returns, fostering innovation and collaboration, and harnessing synergies across the Group's businesses.

Keppel Urban Solutions (KUS) was established in 2017 to further the Group's objective of providing solutions for sustainable urbanisation. KUS is an end-to-end master developer of urban developments, which leverages the Group's experience and strong track record of over two decades in the planning and development of large-scale projects in the Asia Pacific. KUS' capabilities will be applied in its pilot project, Saigon Sports City, a 64-hectare township that Keppel Land is developing in the prime District 2 of Ho Chi Minh City, Vietnam.

Keppel Offshore & Marine (Keppel O&M) has reorganised its operations into two

divisions – the New Builds Division, covering Offshore as well as Gas & Specialised Vessels, and the Conversions & Repairs Division, to better leverage the different capabilities within the Group, and emerge more efficient and competitive.

Keppel Technology & Innovation (KTI) was launched to be a catalyst for change by sharpening the Group's focus on innovation. Through KTI, we aim to transform how Keppel harnesses technology and innovation to create value for our stakeholders, including innovation in business models and the way we work, as well as how we collaborate with third parties to accelerate change.

We have also embarked on transformational projects within the Company – Project Autobots and Project HaRmony – to digitise our infrastructure and harmonise the Group's finance, payroll, procurement and human resources functions, allowing us to increase productivity, reap efficiencies and achieve better control in the digital economy.

**Financial Performance in 2017**

GRI 419-1

For FY 2017, the Group achieved a net profit of \$217 million, after taking into account the one-off financial penalty of \$570 million, arising from Keppel O&M’s global resolution with criminal authorities in the US, Brazil and Singapore, and \$49 million of related legal, accounting and forensics costs. Excluding these one-off items, the Group would have achieved a net profit of \$836 million, an increase of 7% over FY 2016, underpinned by earnings growth in the Property, Infrastructure and Investments Divisions.

Earnings Per Share was 11.9 cents, down 72% from 43.2 cents for 2016. Return On Equity was 1.9%, compared to 6.9% for 2016. Economic Value Added was negative \$834 million for 2017, compared to negative \$140 million for 2016.

Free cash inflow for 2017 was \$1,802 million, compared to \$540 million for 2016. Meanwhile, net gearing for 2017 was 0.46 times, compared to 0.56 times for 2016.

Total cash dividend for 2017 was 22.0 cents per share. This comprises a final cash dividend of 14.0 cents per share and the interim cash dividend of 8.0 cents per share paid in the third quarter of 2017.

**Government Assistance & Taxes Paid**

GRI 201-4

In 2017, the Group received a total of \$50 million in financial assistance from governments. Approximately 91.5% of financial assistance received was from the Singapore government’s Research and Development grants as well as cash grants under its Jobs Credit scheme. Close to 8.0% was received from the government of China, and the remaining 0.5% was from the governments of Australia and Belgium.

The Group operates in more than 20 countries and has paid a total of \$322 million in taxes to the various countries and tax jurisdictions in which it operates.

**Employee Compensation**

In 2017, staff costs amounted to \$1,027 million in the form of wages and salaries, employer’s contribution to Singapore’s Central Provident

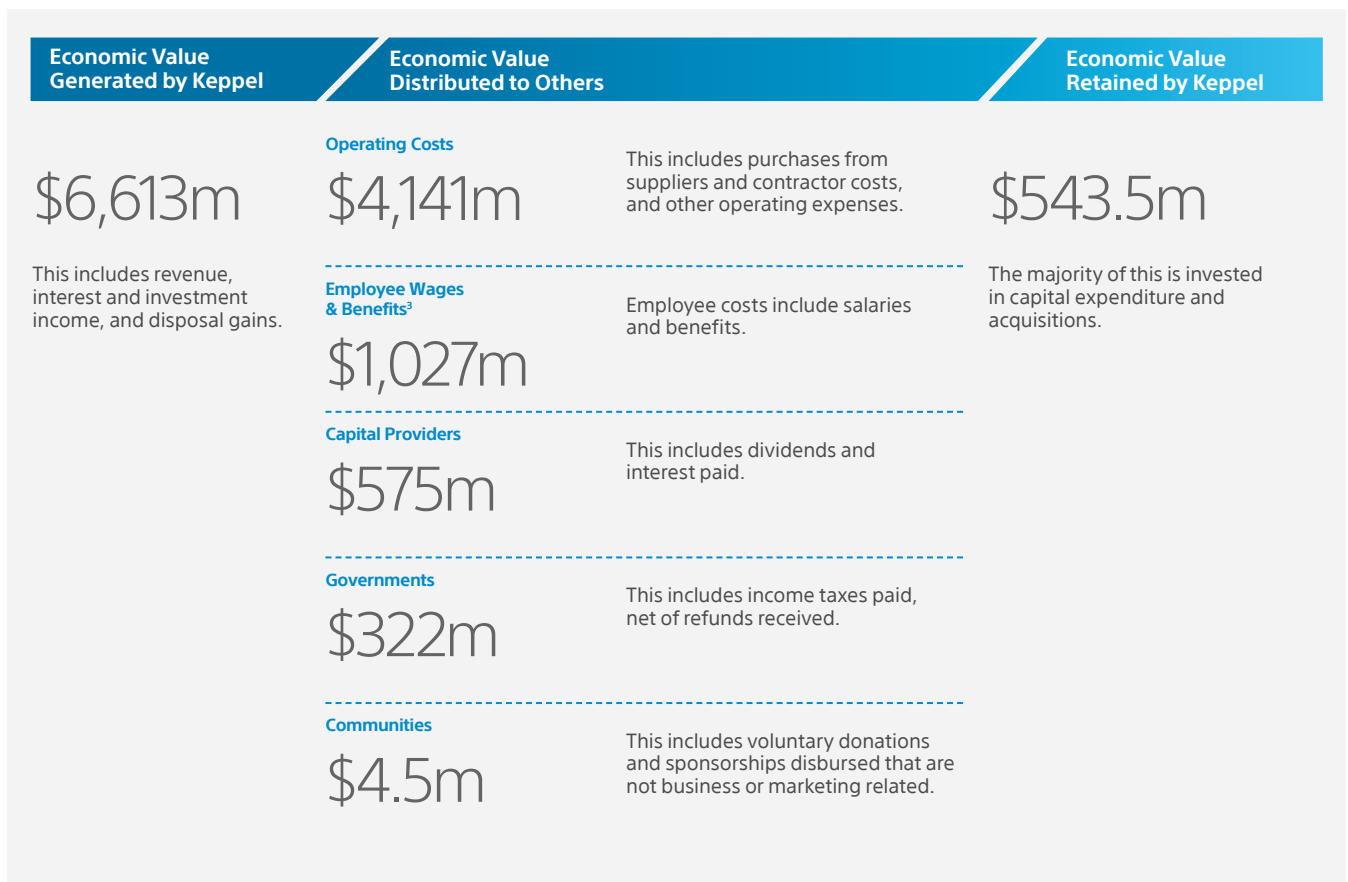
Fund, share options and share plans, as well as other staff benefits. The Group’s average number of employees in 2017 was 21,862<sup>2</sup>.

**Economic Value Delivered to Society**

GRI 201-1

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

In 2017, Keppel generated \$6,613 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> 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.  
<sup>3</sup> Excludes capitalised staff costs in stocks and work-in-progress and capital expenditure.



# Corporate Governance

## Performance Overview

### What we said in 2017

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.

### What we did in 2017

Identified the Group's key risks and assessed the adequacy and effectiveness of the Group's Risk Management System.

Revised investment and divestment risk assessment templates to incorporate additional risk considerations.

Conducted Group-wide risk and compliance survey to gauge risk and compliance-centric culture across the Group.

Delivered targeted training focused on line manager responsibilities in setting the tone for compliance, and extended the scope of the annual e-training and declaration of Group policies exercise.

Reviewed, enhanced and published key compliance policies.

### Targets

Identify opportunities to harmonise both risk and compliance policies and processes, and strengthen corporate governance as well as improve the Group's risk and compliance culture.

Integrate risk management into strategic planning and reinforce proactive risk management approaches.

Recruit experienced compliance officers to further enhance compliance coverage and processes.

Evaluate controls and compliance culture as part of internal audit.

Conduct targeted training and communication of policies and procedures to relevant employees.





**Engaging Investors**

175

Meetings and conference calls with institutional investors.

**Internal Audit Personnel**

> 20%

Increased headcount of internal audit personnel across the Group.

**Communications & Training**

> 6,700

Directors and employees received compliance training on key Group policies and requirements.



SDGs highlighted in this section



1. Our core values of integrity, accountability, people-centredness and safety, along with our refreshed mission to deliver solutions for sustainable urbanisation, guide management and staff to consider risks in all their daily activities.

The long term sustainability of the Group’s businesses is underpinned by our core value of integrity and driven at the highest level of the organisation 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**

GRI 102-18 / 102-22 / 102-23 / 102-26 / 102-33 / 103-1 / 103-2 / 103-3

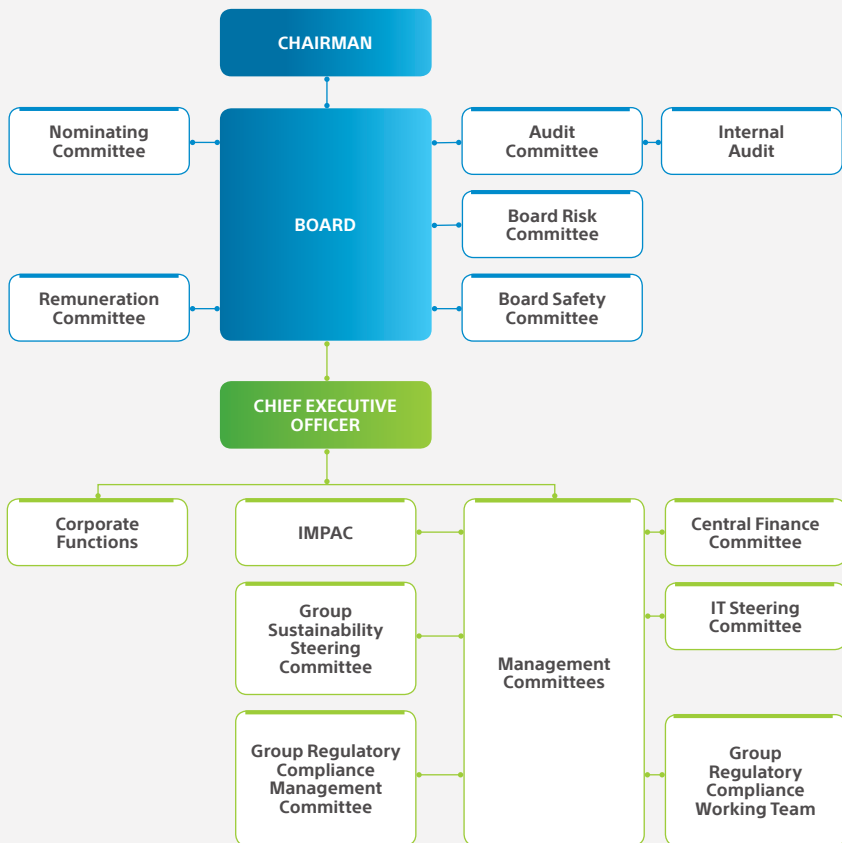
**Governance Framework**

Keppel’s governance structure is set out below.

Lee Boon Yang is the non-executive and independent Chairman of the Company. Loh Chin Hua is the 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

**Governance Framework 2017**



## Corporate Governance

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 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 the 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 guides the Group to exercise the spirit of enterprise as well as prudence to earn optimal risk-adjusted returns on invested capital for our chosen lines of business, taking into consideration the risks, in a controlled manner;
- (2) *Management Development Committee (MDC)*, 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. The MDC also provides inputs, guidance and direction on operational policies and human resources/organisational matters;
- (3) *Central Finance Committee*, which reviews, guides and monitors financial policies and activities of Group companies;
- (4) *Risk and Compliance Committee (RCC)*, which drives and coordinates the Group's risk management efforts, and leads in driving the Enterprise Risk Management framework and its processes;
- (5) *Group Regulatory Compliance Management Committee (Group RCMC)*, which articulates the Group's commitment to regulatory compliance, directs and supports the development of over-arching compliance policies and guidelines, and facilitates the implementation and sharing of policies and procedures across the Group;
- (6) *Group Regulatory Compliance Working Team (Group RCWT)*, which supports the Group RCMC and oversees the development and review of over-arching compliance policies and guidelines for the Group, as well as reviewing training and communication programmes;
- (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 FY2014, the Board approved the Group's Vision 2020<sup>1</sup> which sets out the vision, operating principles and values of the Group, and the roadmap<sup>2</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 to provide the Board an opportunity to perform an in-depth review into each of the Group's core businesses.

### An Effective Board

GRI 102-24 / 102-25 / 102-27 / 102-28

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.

### 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 comprised entirely independent or non-executive directors, with independent chairmen.

The independence of the directors are reviewed by the Nominating Committee ("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. The NC carried out the review on the independence of each non-executive director in January 2017 based on the respective directors' self-declaration in

<sup>1</sup> With effect from FY2014, and following a review and update in FY 2017, 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 our operating principles and core values, the Company's mission is to deliver our solutions for sustainable urbanisation profitably, safely and responsibly.

<sup>2</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.



the Directors' Independence Checklist and their 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 2017, 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.

### Board Competency & Diversity

The competencies and skill sets 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.

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 2017, there was one female director out of a total of nine directors.

### 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.

### 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 matters. In FY2017, some KCL directors attended talks on topics relating to corporate governance and compliance (including case studies), sanctions, financial reporting updates and macroeconomic trends. 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 Evaluation

Our Board has implemented formal processes for assessing the effectiveness of the Board as a whole and 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 (the "Independent Co-ordinator") to assist in collating and analysing the returns of the board members. Mrs Fang Ai Lian, former Chairman, Ernst & Young and Great Eastern Holdings Ltd, and currently Advisor to Far East Organisation, was appointed for this role. Mrs Fang Ai Lian does not have business relationships or any other connections with the Company which may affect her independent judgment.

### 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 careful planning, where the appropriate composition of the Board is continually under review.

The NC is responsible for reviewing the succession plans for the Board. In this regard, it 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 reviews annually 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 the light of such review 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 (for example, from the Singapore Institute of Directors, search consultants, or through 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 short-listed 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.

## Corporate Governance

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) Able 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) Financially literate

The NC is also charged with the responsibility of 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 the 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

GRI 102-35 / 102-36 / 102-28

The Remuneration Committee ("RC") is responsible for ensuring a formal and transparent procedure for developing policy on executive remuneration and for determining the remuneration packages of individual directors and senior management. The 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 (which covers all aspects of remuneration including directors' fees, salaries, allowances, bonuses, grant of shares and benefits in kind) and the specific remuneration packages for each director and the 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 in 2010, the KCL Restricted Share Plan (the "KCL RSP") and the KCL Performance Share Plan (the "KCL PSP"). In addition, the RC reviews the Company's obligations

arising in the event of termination of the executive directors' and key management personnel's contract of service, to ensure that such contracts of service contain fair and reasonable termination clauses which are not overly generous.

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 2017, 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 and is aligned with shareholders' interests.

In designing the remuneration 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 remuneration, and between cash versus equity incentive remuneration.

In 2016/2017, the RC undertook a comprehensive review of the total remuneration structure. With the assistance of Aon Hewitt, the RC revised the total remuneration structure to reflect the following four key objectives:

- (1) Shareholder Alignment: To incorporate performance measures that are aligned to shareholders' interests
- (2) Long-term Orientation: To motivate employees to drive sustainable long-term growth
- (3) Simplicity: To ensure that the remuneration structure is easy to understand and communicate to stakeholders
- (4) Synergy: To facilitate talent mobility and enhance collaboration across businesses

The revised total remuneration structure comprises three components; that is, annual fixed cash, annual performance bonus, 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 size of the Company's annual performance bonus pot is determined by the Group's financial and non-financial performance, and is distributed to employees based on their individual performance. The KCL Share Plans are in the form of two share plans approved by shareholders, the KCL RSP and the KCL PSP. A portion of the annual performance bonus is granted in the form of deferred shares that are awarded under the KCL RSP. The KCL PSP comprises performance targets determined on an annual basis. The KCL RSP and KCL PSP are long term incentive plans which vest over a longer term horizon. Executives who have a greater ability to influence Group outcomes have a greater proportion of their overall remuneration at risk.

The RC exercises broad discretion and independent judgement in ensuring that the amount and mix of remuneration is aligned with the interests of shareholders and promotes 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 remuneration structure is directly linked to corporate and individual performance, both in terms of financial and non-financial performance. This link is achieved in the following ways:

- (1) by placing a significant portion of executives' remuneration at risk ("At Risk component") and subject to a vesting schedule;
- (2) by incorporating appropriate key performance indicators ("KPIs") for awarding of annual performance bonus:
  - (i) There are four scorecard areas that the Company has identified as key to measuring the performance of the Group – (A) Financial and Business Drivers; (B) Process; (C) Stakeholders; and (D) People. Some of the key sub-targets within each of the scorecard areas include key financial indicators, safety goals, risk management, compliance and controls measures, corporate social responsibility activities, employee engagement, talent development and succession planning;
  - (ii) The four scorecard 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.

The RC reviews and approves the scorecard annually;

- (3) by selecting performance conditions for the KCL PSP awards, such as Total Shareholder Return, Return on Capital Employed and Net Profit that are aligned with shareholders' 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 remuneration 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 remuneration structure through several initiatives, including but not limited to:

- (1) prudent funding of annual performance bonus;
- (2) granting a portion of the annual performance bonus in the form of deferred shares, to be awarded under the KCL RSP;
- (3) vesting of contingent share awards under the KCL PSP 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, set forth above, have been met. The RC is therefore of the view that remuneration is aligned to performance during FY 2017.

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. They are also required to hold a minimum number of shares under the share ownership guideline which requires them to maintain a beneficial ownership stake in the Company, thus further aligning their interests with shareholders.

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 ("Cash Component") 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 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.

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

#### Risk Management & Internal Controls

GRI 102-11 / 102-17 / 102-33 / 205-2 / 419-1

The Board, supported by the Audit Committee ("AC") and Board Risk Committee ("BRC"), oversees the Keppel's System of Management Controls Framework (the "Framework"), which outlines the Company's internal control and risk management processes and procedures.

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. 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.

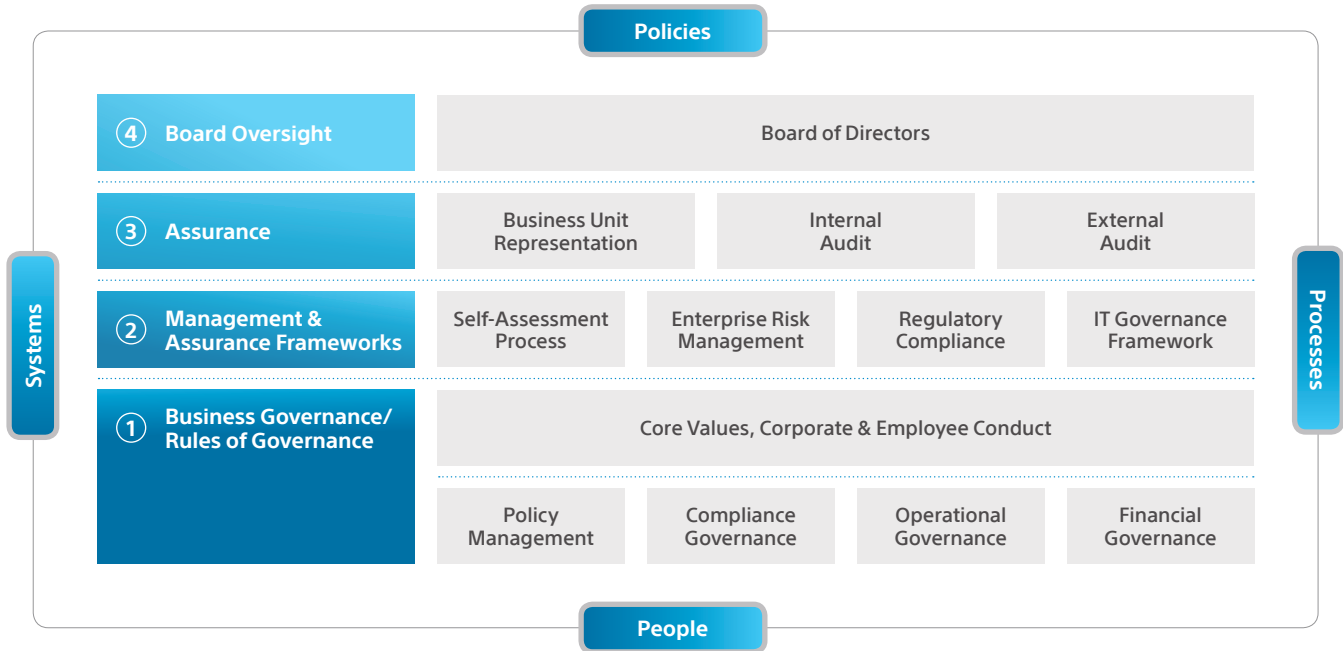
#### Keppel's System of Management Controls Framework

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



# Corporate Governance

## Keppel's System of Management Controls (KSMC)



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. Employees are also guided by the Group's Core Values and expected to comply strictly with Keppel's 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 system of internal controls and risk management. Such assurances are also sought from the Group's internal and external auditors based on their independent assessments.

### Enhanced Compliance Programme

In December 2017, a wholly owned subsidiary, Keppel Offshore & Marine Limited ("KOM"), reached a global resolution with the criminal authorities in the United States, Brazil and Singapore in relation to corrupt payments made by KOM's former agent in Brazil, which were made with knowledge or approval of former KOM executives.

An overview of the improvements and enhancements that has been made to strengthen Keppel's compliance programme since 2015, following a review of our compliance programme, can be found from pages 75 to 77 of Keppel Corporation's Report to Shareholders 2017. The Company is committed to a continuous review of,

and where necessary and appropriate, further improvements and enhancements to the Group's compliance programme will be made.

### Communication and Training

The Group continuously ensures that its compliance policies and procedures are communicated effectively to all employees and directors. A mandatory e-training and assessment exercise covering all key policies, including Keppel's Enhanced Code of Conduct, is carried out on an annual basis, and for FY2017, over 6,700 directors and employees have completed the e-training and assessment.

### Reporting and Investigation

Keppel Whistle-Blower Policy (the "Policy") took effect on 1 September 2004 and was enhanced on 15 February 2017 to encourage reporting in good faith of suspected reportable conduct by establishing clearly defined and centralised 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.

For more details on the Risk Management & Internal Controls framework, please refer to pages 74 to 77 of Keppel Corporation's Report to Shareholders 2017.

# Risk Management

GRI 102-11 / 102-15 / 103-1 / 103-2 / 103-3

We maintain a balanced approach to risk management, undertaking only appropriate and well-considered risks to optimise returns for our shareholders.

Keppel's risk management approach arises from the philosophy of seeking sustainable growth opportunities and creating economic value, while ensuring only appropriate and well-considered risks are assumed. Risk management is an integral part of the way in which we develop and execute our business strategies.

Notwithstanding the challenges, we continued a disciplined pursuit of new opportunities, innovation and revenue streams to safeguard shareholders' interest and the Group's assets. Our robust risk-centric culture and risk management system have enabled us to continue to respond effectively to the dynamic business environment, shifting business demands and to seize new value-added opportunities for our stakeholders.

### Risk-Centric Culture

Effective risk management hinges not only on systems and processes, but equally on mindsets and attitudes. The Group fosters a risk-centric culture through several aspects.

#### 1. Leadership & Governance

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

#### 2. Framework & Values

Supported by an established risk management framework, our core values of integrity, accountability, people-centredness and safety, along with our refreshed mission to deliver solutions for sustainable urbanisation responsibly, guides management and staff to consider risks in all their daily activities.

#### 3. Process & Methods

In applying the risk management framework and guided by best practices, an integral aspect of both strategic and operational decision making includes

consideration and management of risks at all levels of the businesses. As part of the process, appropriate tools, techniques and risk management methodologies are applied along with the requisite domain knowledge capabilities.

#### 4. Training & Communication

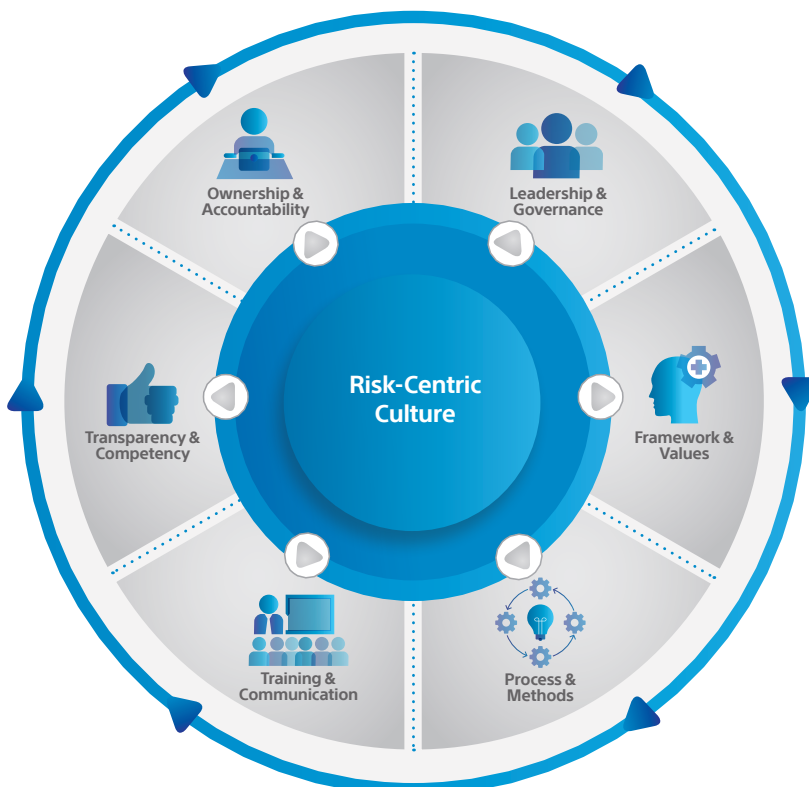
Training and communication are held regularly to enhance risk management competency across the Group. Through various forums and in-house publications, including different modes of training, risk management is reinforced as a discipline and developed through awareness and practice.

#### 5. Transparency & Competency

We promote transparency in information sharing and escalation of risk-related matters. Risk identification and assessment are embedded in our control processes. A Group-wide survey is conducted periodically to assess the level of risk awareness amongst employees.

#### 6. Ownership & Accountability

To maintain our standards in risk management, we advocate ownership and accountability of our employees for risk management through the performance evaluation process.



### Enterprise Risk Management Framework

Keppel's Board is responsible for risk governance and ensures that management maintains a sound system of risk management and internal controls. Through the Board Risk Committee (BRC), the Board provides valuable advice to management in formulating the risk management framework, policies and guidelines. Our management surfaces significant risk issues for discussion with the BRC and the Board to keep them fully informed in a timely manner.

The terms of reference for the BRC are disclosed on pages 79 and 80 of Keppel Corporation's Report to Shareholders 2017.

The Board has defined 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 our strategic objectives.

## Risk Management

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.

Keppel's risk governance framework, set out on pages 74 to 77 in Keppel Corporation's Report to Shareholders 2017, under Principle 11 (Risk Management and Internal Controls), 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 are cognisant of the dynamic environment in which the Group operates and continue to constantly refine the framework and systems where necessary, to ensure strong risk 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 to ensure relevance in a dynamic operating environment and where required, tailored to the requirements of each business unit depending on specific industries and objectives. The framework takes reference from the Singapore Code of Corporate Governance, ISO 31000, ISO 22313 and the Guidebook for Audit Committees.

Our Risk and Compliance Committee, comprising relevant subject matter risk champions across the business units, drives and coordinates Group-wide risk management activities and initiatives. This is bolstered by regular bilateral and business unit level meetings to ensure that relevant risks are identified, assessed and mitigated in a timely manner. We keep abreast of the latest developments and best practices through participation in industry seminars and interacting with risk management practitioners.

We adopt a balanced approach to risk management. Given not all risks can be eliminated, we are committed to undertaking appropriate and well-considered risks to optimise returns for the Group.

### Strategic Risks

#### Market & Competition

A large part of the Group's strategic risks comprise market driven forces, evolving competitive landscapes, changing customer demands and disruptive innovation. The Group remains vulnerable to a number of external factors including uncertainties in the global economy, implications from geo-political developments and threats of disruptive technology. These risks receive constant high-level attention throughout the year. Strategy meetings are held across the Group 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 policies and limits 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 to meet 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 and Major Project Action Committee (IMPAC) guides the Group to take considered risks in a controlled manner, exercising the spirit of enterprise, as well as prudence to earn the best risk-adjusted returns on invested capital across all our businesses.

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 learnt. 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 continue to maintain a strong emphasis on attracting and building a deep pool of talent. This includes nurturing employees, maintaining good industrial relations and fostering a conducive work environment for our employees. The Group is focused on strengthening succession planning and bench strength, as well as building organisational capabilities to drive business

growth whilst maintaining our status as an employer of choice.

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 groom leaders and equip them with the capabilities to drive and support Keppel's growth, helps to inculcate this mindset by embedding risk management in its key leadership courses.

### Operational Risks

#### Project Management

From initiation through to completion, risk management processes are an integral part of project management activities 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 Environmental (HSE) standard is of paramount importance to the Group.

We constantly strive to raise awareness, maintain vigilance and foster a strong HSE-centric culture across the Group and particularly at the ground level. Key initiatives include driving a Zero Fatality Strategy with a roadmap focused on aligning High Impact Risk Activities safety standards across our global operations, enhancing competency of employees performing safety-critical tasks, strengthening operational controls, deploying standard Root Cause Analysis across the Group, 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. Testament to the Group's concerted efforts in safety, Keppel clinched 36 awards at the WSH Awards for exemplary safety performances and implementation of strong WSH management systems, as well as efforts in creating solutions that improve workplace safety.

### Business & Operational Processes

We continue to streamline business processes. We have implemented initiatives to establish a common shared services platform which allows us to continue to achieve cost savings, improve efficiency and productivity, as well as enhance governance, compliance and control.

We have 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 the 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 business disruptions, ensuring that critical business functions continue to operate with minimal impact to our people, operations and assets. As a Group, we are cognisant of the increasing risk of natural disasters, terrorism and cyber threats, and have increased our efforts in reviewing and testing our operational preparedness and effectiveness of our BCM plans. Follow-up actions are taken to strengthen operational resilience with all key learning points 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.

Urbanisation and connectivity have given rise to rapidly increasing concerns around cyber security. The Group maintains a close watch and keeps abreast of techniques and threats as they evolve, in order to develop the appropriate mitigation measures. This will remain a key focus area for the Group. 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-assessments to identify IT security gaps.

We have dedicated IT expertise to keep abreast of the latest developments, innovation and threats in technology and assess their impact and risks at various levels. 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 Risks

GRI 205-1

#### Laws, Regulations & Compliance

Given the geographical diversity of our businesses, we closely monitor developments in the laws and regulations of 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 to laws and regulations.

We recognise that non-compliance with laws and regulations not only has significant financial impact but potentially detrimental reputational impact on the Group. We are fully committed to strengthening our regulatory compliance framework. Our emphasis is clear and consistently reiterated. We have zero tolerance for fraud, bribery, corruption and violation of laws and regulations.

During the year, we continued to make significant progress on our regulatory compliance initiatives, ensuring that compliance principles are embedded in our activities and implementing best practices from industry leaders as we develop and strengthen our compliance framework. Significant risks issues, such as risks relating to corruption in all areas of operations within the Keppel Group, are surfaced by management and assessed by the Board. With respect to corruption, significant risks include areas where external agents are used for business development. More details on the steps taken by the Group in operationalising regulatory compliance are set out on pages 38 and 39 of this report.

### Financial Risks

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

We maintain a strong emphasis on ensuring financial statements are accurate and presented fairly in accordance with applicable financial reporting standards and framework.

Regular external and internal audits are conducted to provide assurance on accuracy of financial statements and adequacy of the internal control framework supporting the statements. Where required, we leverage the expertise of the engaged auditors in the interpretation of financial reporting standards and changes. We hold regular training and education programmes to enhance competency of finance managers across the Group. 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 34 of this report.

### 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 new opportunities. This includes the evaluation of counterparties and related risks against pre-established guidelines. For more details on the Group's financial risk management, please refer to pages 57 and 58 of Keppel Corporation's Report to Shareholders 2017.

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 regularly monitor the concentration of exposure in the countries where the Group operates to ensure that our portfolio of assets, investments and businesses are adequately safeguarded against the systemic risks of operating in a specific geography.

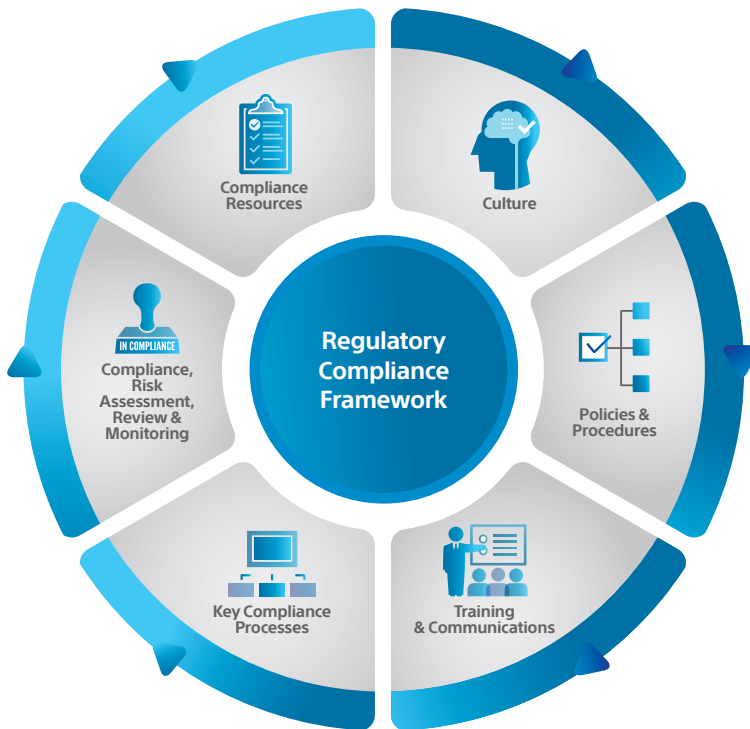
### Proactive Risk Management

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

# Regulatory Compliance

GRI 102-15

The tone for regulatory compliance is driven from the top. Guided by our core values, we are committed to building a more disciplined and sustainable company.



Guided by our core values and enhanced code of conduct, we are fully committed to ensuring that compliance is a central pillar of our management and an integral part of our corporate culture and business processes. We will do business the right way and comply with all applicable laws and regulations wherever we operate. We strive to achieve outstanding performance, whilst maintaining the highest level of ethical integrity. Our tone on regulatory compliance is clear and consistently reiterated from the top of the organisation. We have zero tolerance for fraud, bribery, corruption and violation of laws and regulations.

### Strategic Objectives

Following the improvements and enhancements to the compliance framework and processes implemented since 2015, we are focused on ensuring consistency in application and effectiveness of the compliance programme across the Group. We want a compliance framework that commensurates with the size, role and activity of our businesses, including the appropriate compliance control systems, to be able to effectively detect and remedy gaps. Most importantly, we are focused on rebuilding our credibility and reputation with our stakeholders and to build a sustainable compliance framework to support the Group's growth.

### Governance Structure

Our Regulatory Compliance Governance Structure is designed to strengthen our corporate governance. The Board Risk Committee (BRC) supports the Board in its oversight of regulatory compliance and is responsible for driving the Group's focus on implementing effective compliance and governance systems. The Group Risk & Compliance Department serves as a secretariat to the BRC, assessing and reporting on the Group's compliance risks, controls and mitigations.

The Group Regulatory Compliance Management Committee ("Group RCMC") is chaired by Keppel Corporation's Chief Executive Officer (CEO) and its members includes all business unit heads. The role of the Group RCMC is to articulate the Group's commitment to regulatory compliance, direct and support the development of overarching compliance policies and guidelines, and facilitate the effective implementation of policies and procedures across the Group.

The Group RCMC is supported by the Group Regulatory Compliance Working Team ("Group RCWT"), which is chaired by the Head of Group Risk & Compliance. The Group RCWT oversees the development and review of pertinent regulatory compliance

matters, overarching compliance policies and guidelines for the Group, as well as reviewing training and communication programmes.

Each business unit in the Group has a dedicated Compliance Lead, supported by the respective risk and compliance teams, and is responsible for driving and administering the compliance function and agenda for the business unit. This includes providing support to business unit management with subject matter expertise, process excellence and regular reporting to ensure that compliance risks are effectively managed and mitigated. Across the Group, recruitment efforts are in progress to strengthen the Compliance team with additional professional and experienced compliance officers.

Under the overall direction of the Group RCMC and Group RCWT, business units working in partnership with their respective risk and compliance teams are responsible for implementing the Group's Code of Conduct and regulatory compliance policies and procedures. They are also responsible for ensuring that risk assessments in relation to material regulatory compliance risks are conducted, and control measures are adequate and effective, to mitigate the identified risks which the business units may face.

### Regulatory Compliance Framework

As part of ongoing efforts to strengthen our regulatory compliance framework, we have further defined our focus on compliance covering broadly the following areas: culture, policies and procedures, training and communication, key compliance processes, compliance risk assessment, reviews and monitoring, and compliance resources.

One of the more important aspects of the framework is the structure of the compliance organisation. During the year, we made changes to the reporting structure of the compliance organisation to reinforce independence of the function. The Head of Group Risk & Compliance now reports directly to the Chairman of the BRC. Similarly, the compliance leads of the business units have established direct reporting lines to the respective Audit or Board Risk Committees. In addition, business unit compliance leads report directly to the Head of Group Risk & Compliance. This reporting structure reinforces independence of the function and enables senior management, including members of the Board, to provide continuous, clear and explicit support to the Group's compliance programme.



## Culture

Culture and mindset are critical in ensuring effectiveness of the compliance programme. Management has a key role in setting the right tone and walking the talk. The tone on full regulatory compliance has to cascade through the organisation. During the year, we implemented initiatives to continue to foster the desired full compliance culture. These include campaign posters on anti-bribery, anti-corruption and reporting mechanisms that are now exhibited in all our offices globally to reinforce the message; individual performance measures to influence personal behaviour, and periodic compliance-focused messages delivered by business unit heads to their employees. A Group-wide survey was conducted to assess awareness of compliance and to identify potential areas requiring further emphasis.

## Policies & Procedures

GRI 102-16 / 102-17

### Employee Code of Conduct

We have a strict Code of Conduct that applies to all employees, who are required to acknowledge and comply with the Code. The Code of Conduct sets out important principles to guide employees in carrying out their duties and responsibilities to the highest standards of personal and corporate integrity. It covers areas from conduct in the workplace to business conduct, including clear provisions on prohibitions against bribery and corruption, and conflicts of interests amongst others. Appropriate disciplinary action, including suspension or termination of employment, will be taken in the event that an employee is found to have violated the rules set out in the Code of Conduct. The Code of Conduct is also provided to all third parties who represent Keppel in business dealings, including joint venture partners, who are required to acknowledge understanding and compliance with the requirements of the Code of Conduct.

### Supplier Code of Conduct

The acknowledgement to abide by our Supplier Code of Conduct, which was developed to integrate Keppel's sustainability principles across our supply chain, and positively influence the environmental, social and governance performance of our suppliers, is mandatory for all key suppliers of the Keppel Group. The areas covered within the Keppel Supplier Code of Conduct include proper business conduct, fair labour practices, stringent safety and health standards, and responsible environmental management.

### Whistle-Blower Policy

Keppel's Whistle-Blower Policy encourages the reporting of suspected bribery, violations or misconduct through a

clearly-defined process and reporting channel, by which reports can be made in confidence and without fear of reprisal. The process is reviewed regularly. During the year, we made enhancements to ensure that reporting channels are readily available and we are in the process of implementing solutions to cater to different languages and time zone requirements globally.

### Compliance Policies

The Group maintains a comprehensive list of policies covering compliance-related matters including gifts, hospitality, agent fees, donations, sponsorships and insider trading amongst others. These policies are reviewed periodically to ensure that they commensurate with the activities in the jurisdictions in which the Group operates. Group policies are applicable to all business units and unless the jurisdictional regulatory requirements are more stringent, the Group policy represents the minimum standard for the Group.

### Training & Communications

GRI 205-2

Training is an essential component of Keppel's regulatory compliance framework. Our programmes are tailored to specific audiences and we leverage Group-wide forums to reiterate key messages. We have a comprehensive annual e-learning training programme which is mandatory for all directors, officers and employees. The content of the training covers key compliance policies, and directors, officers and employees are required to complete assessments at the end of the training to successfully mark completion. As part of the annual training, directors, officers and employees are also required to formally acknowledge their understanding of policies and declare any potential conflicts of interest.

We continue to focus on refining our compliance training programmes and curriculum for new and existing employees as well as, to develop and tailor training content depending on the target audience. In addition to policy-related training programmes, we conduct trainings focused on the line manager's responsibilities in developing the desired culture and mindset regarding compliance. These responsibilities include the need to establish and maintain effective internal controls to ensure that processes are robust and potential gaps are identified and mitigated in a timely manner.

Group Risk & Compliance conducts periodic site visits, particularly to locations susceptible to higher corruption risks, to raise awareness of compliance risks.

In addition, we leverage opportunities at various management conferences and employee meetings to stress the importance of compliance.

## Key Processes

### Due Diligence

We have improved our risk-based due diligence process for all third party associates who represent the Keppel Group in business dealings, including our joint venture partners, to assess the compliance risk of the business partner. In addition to background checks, the due diligence process incorporates requirements for third party associates to acknowledge understanding and compliance with our Code of Conduct.

### Other Processes

As part of our ongoing review of policies and procedures, we ensure compliance oversight is embedded in key processes including areas such as gifts and hospitality, agent fees, donations and sponsorships, as well as conflicts of interest.

### Best Practices

We recognise the need to continually benchmark our compliance programmes against best practices and augment our processes to ensure they are consistent and robust. During the year, our compliance framework and programmes have also been reviewed by an external advisor and all recommendations from the review have been incorporated into our compliance initiatives.

## Risk Assessment, Review & Monitoring

GRI 102-30

We continue to develop our compliance resources and framework. This will enable the Compliance team to conduct independent risk assessments to identify and mitigate key compliance risks. Regular discussions are held with all business units, focusing on risk assessments including specific compliance risks identified for their respective businesses. Separately, independent reviews of compliance risks are carried out within the scope of internal audits including thematic reviews of the effectiveness of key aspects of our compliance programmes.

## Resources

We recognise the need for an experienced compliance team to effectively support the business in compliance advisory, as well as to ensure that compliance programmes and controls are effectively implemented. Senior management, including members of the Board, are fully committed to ensuring that we build a strong compliance function.



# Environmental Management

## Performance Overview

### What we said in 2017

Continue to factor in environmental considerations in our businesses.

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

### What we did in 2017

Invested in innovative technologies and designs to provide more sustainable and efficient solutions.

Progressively adopted clean energy to power our facilities where possible.

Installed energy-efficient equipment and devices at our facilities, including LED lights and more energy-efficient chillers.

### Targets

Achieve a 28.8% reduction in carbon emissions intensity by 2030 from 2010 levels, in addition to the target of a 16% improvement in carbon emissions from 2020 business-as-usual levels.

Improve the environmental management systems of key business units to meet the requirements of the revised ISO 14001 standard.

Develop solutions that minimise environmental impact.

Increase the generation and usage of renewable energy in our operations.





**Energy Savings**

650,144GJ

Of projected energy savings through energy efficiency initiatives implemented in 2017 and from Keppel Land's Green Mark-certified developments, translating to estimated cost savings of about \$37 million.

**Water Savings**

727,702m<sup>3</sup>

Of water recycled in 2017, equivalent to approximately 14% of the Group's total water consumption.



SDGs highlighted in this section



**We are committed to improve resource efficiency and reduce our environmental impact.**

**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 Offshore & Marine (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 2017 was expanded to include data from two of Keppel Infrastructure Trust's assets – the Basslink Interconnector in Australia and SingSpring Desalination Plant in Singapore.

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**

GRI 103-1 / 103-2 / 103-3

The Group's risk-based strategies are used to assess, avoid, reduce and mitigate environmental risks and impacts. Our focus areas are enhancing energy efficiency, managing water and waste, reducing our carbon emissions and improving our environmental management systems.

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, and Managing Director of Keppel Urban Solutions. The committee sets targets, evaluates the effectiveness of our carbon management efforts, and monitors and reports on performance. The Committee comprises representatives from business units, many of whom are certified energy managers.

Most of our key business units are certified to the ISO 14001 Environmental Management System, which guides how we identify, manage, monitor and control environmental issues. Other certifications include the SS 564 Singapore Standard for National Green Data Centres Management System.

1. *Through the first Integrated Waste Management Facility in Hong Kong, Keppel will contribute to the country's goal of sustainable urbanisation.*
2. *Keppel invests in renewable energy sources so as to reduce its environmental footprint in the long run.*



## Environmental Management

### Keppel Corporation's Climate Action Pledge

As a solutions provider for sustainable urbanisation, Keppel Corporation pledges our commitment to support efforts by the international community and the Singapore government in tackling climate change.

#### Our Climate Action Goals 2018

To factor in environmental considerations in our businesses.

To optimise our operations and processes to enhance energy efficiency.

To invest in green technology and increase usage of renewable sources of energy.

To include more eco-friendly features in our products.

To promote eco-consciousness among our stakeholders.

To publicly disclose in the Keppel Corporation Sustainability Report, our carbon emissions intensity reduction target.



The ISO 14001 standard was upgraded in September 2015 to include enhanced or new requirements on leadership, environmental performance, lifecycle thinking, documentation and risk identification. As part of continuous improvement plans, Keppel FELS, Keppel Shipyard and Keppel Land's operations in Singapore received certification to the upgraded standard in 2017.

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.

#### Sustainable Design

In line with our mission of providing solutions for sustainable urbanisation, the Group considers environmental factors during the planning and design of our property developments, data centres and warehouses as well as during their operation phases.

Keppel Land developed a set of Responsible Design Values for all its new projects in Singapore and overseas. The guidelines encapsulate the company's efforts to deliver the best standards in liveability, quality, aesthetics and sustainability.

In recognition of its environmentally-friendly design and construction, Marina Bay Financial Centre Towers 1 and 2 received the Green Mark Platinum Award from the Building & Construction Authority of Singapore (BCA) in March 2017.



**1.** Keppel Land is committed to deliver the best standards in liveability, quality, aesthetics and sustainability in all its projects.

**2.** Marina Bay Financial Centre Towers 1 (pictured) and 2 garnered the BCA Green Mark Platinum Award for their eco-friendly features.



Keppel DC Singapore 4 (KDC SGP 4) also received three green certifications: the BCA-Info-communications Media Development Authority Green Mark Award (Platinum) for New Data Centres, BCA Green Mark Award (Platinum) for Non-residential New Buildings and LEED Gold for Core and Shell development by the US Green Building Council (see page 49).

In China, Keppel Logistics Tianjin Eco-City received the BCA Green Mark Award for Buildings (Overseas). Its green features include the use of grey water for toilet flushing and irrigation, minimum window openings at East, West and North orientation to reduce usage of air-conditioning and a building envelope thermal performance of 55% better than baseline<sup>1</sup>.

**Energy**

GRI 302-1 / 302-4

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 sources are diesel, naphtha, Piped Natural Gas, petrol, furnace oil and Liquefied Petroleum Gas.

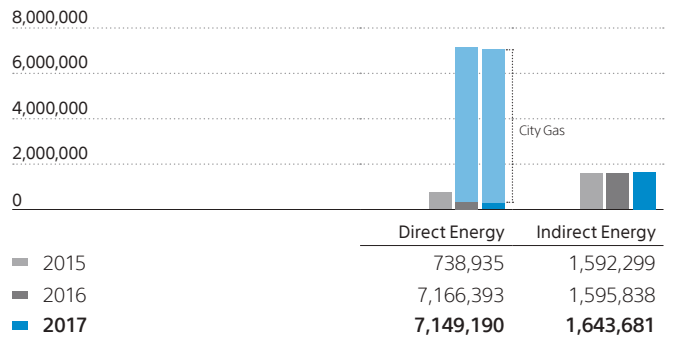
In 2017, the Group consumed 7,271,829 gigajoules (GJ) of direct energy and 1,890,734 GJ of indirect energy or electricity, compared to 7,394,690 GJ of direct energy and 1,820,611 GJ of indirect energy in 2016.

Our Singapore operations consumed 7,149,190 GJ of direct energy and 1,643,681 GJ of indirect energy in 2017, compared to 7,166,393 GJ of direct energy and 1,595,838 GJ of indirect energy in 2016. The data includes direct energy used in activities carried out by both employees and contractors at our worksites.

The slight decrease in direct energy consumption was due mainly to the combination of reduced yard activities and green initiatives such as the replacement of diesel generators at our shipyards with electricity or renewable energy. The significant increase in direct energy in 2016 compared to 2015 was due to the inclusion of direct energy consumption from City Gas, the sole retailer of town gas in Singapore.

The increase in indirect energy consumption was mainly due to the inclusion of indirect energy consumption from SingSpring Desalination Plant and the Basslink Interconnector. Excluding these two facilities, the Group had consumed 1,523,109 GJ of indirect energy in 2017. This is a 4.8% reduction from 1,595,838 GJ in 2016, which is attributed to various energy efficiency initiatives across the Group.

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



<sup>1</sup> Building and Construction Authority (2017), BCA Awards 2017, Recognising Excellence in the Built Environment.



## Environmental Management



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 650,144 GJ<sup>2</sup> of energy from its energy efficiency initiatives in 2017 and from Keppel Land's Green Mark-certified developments<sup>3</sup>. The total energy saving is equivalent to nearly 7.1% of the Group's total energy consumption in 2017, and translates to estimated cost savings of about \$37 million<sup>4</sup> and avoidance of approximately 77,000 tonnes of carbon dioxide (t-CO<sub>2</sub>) emissions<sup>5</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 2017 are:

- Florescent lights at Keppel FELS' Production Office were replaced with more energy-efficient LED lights<sup>6</sup>.
- Halogen, incandescent and general lights on board Keppel Shipyard's vessels were replaced with LED lights, some of which are battery-powered.
- A chilled water cooling system, diesel rotary uninterruptible power supply system with a distributed redundant configuration, and a combination of multi-compressor and centrifugal chillers were installed to optimise efficiency at different load conditions at KDC SGP 4<sup>7</sup>.

### Harnessing Renewables

Keppel DC Dublin 1 data centre in Ireland is now fully powered by renewable energy. This initiative by KDCR (Ireland), a wholly-owned entity of Keppel DC REIT, helps avoid the emission of more than 11,000 t-CO<sub>2</sub> per year<sup>8</sup>.

Keppel O&M and Keppel Infrastructure are collaborating on a solar leasing project at Keppel O&M's yards, where the renewable energy generated will help offset the yards' energy requirements. In addition, some of the renewable energy certificates generated through this initiative will be transferred to Keppel Corporation, allowing our corporate office to be fully powered by clean energy from the end of 2018 through the retirement of these certificates<sup>9</sup>.

Separately, Keppel O&M entered into a Memorandum of Understanding with Nanyang Technological University to explore collaboration in renewable energy and micro-grid projects.

### Water

GRI 303-1 / 303-3

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.

The Group consumed 5,111,239 cubic metres (m<sup>3</sup>) of water in 2017. This is a 7% decrease compared to 5,499,136 m<sup>3</sup> in 2016. For yards that were closed or divested in 2017, data from the beginning of the year to the time of closure is included.



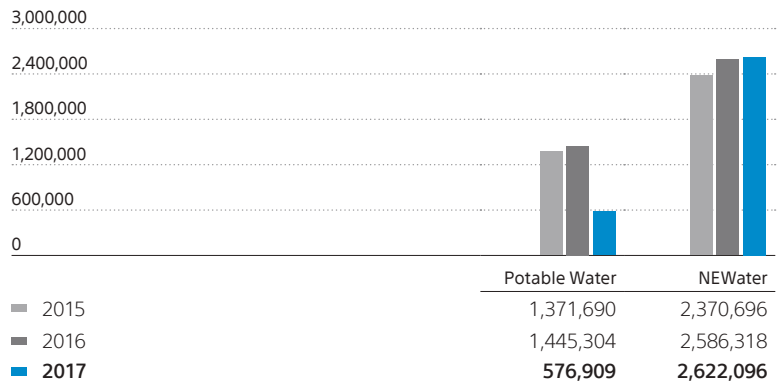
Our operations in Singapore consumed 4,350,997 m<sup>3</sup> of water compared to 4,031,622 m<sup>3</sup> in 2016. Of the water consumed in Singapore, close to 17%, or 727,646 m<sup>3</sup>, was recycled water used in Keppel Infrastructure’s waste-to-energy (WTE) plants. The decrease in water consumption at the Group level is largely attributed to a reduction in yard activities in Brazil, the Philippines and the US, as well as the sale of Keppel Verolme.

**Water Recycling**

The Sino-Singapore Tianjin Eco-City Water Reclamation Centre was officially opened in June 2017. The Centre, a joint venture between Keppel Infrastructure and Tianjin Eco-City Investment and Development Co., Ltd., treats wastewater effluent from an existing wastewater treatment plant to produce recycled water that meets China’s most stringent standards for urban miscellaneous water consumption.

At Keppel DC REIT’s data centres, most of the water consumed is used by chilled water cooling systems to maintain optimal environmental conditions for clients’ mission-critical IT equipment. To reduce water consumption, the REIT worked to increase the water recycling capability of the cooling towers at Keppel DC Singapore 1 and Keppel DC Singapore 2.

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



- <sup>2</sup> The 650,144 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 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>3</sup> The environmental performance of Green Mark-certified developments were assessed based on Singapore’s BCA Green Mark for Non-Residential/Residential Buildings Criteria, Technical Guide and Requirements. These include completed developments as well as Green Mark projects awarded in 2017.
- <sup>4</sup> The electricity conversion factor used is based on the United Kingdom’s 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 2017 as published by Singapore Power, whereby 1 kWh = \$0.2065.
- <sup>5</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 = 0.4244 kg CO<sub>2</sub>) published by Singapore’s Energy Market Authority.
- <sup>6</sup> The amount of savings in absolute terms is the difference in consumption before and after the replacement of conventional lighting to LED lights. Savings are calculated based on savings of 64 W each for 80 LED lights, and savings of 30 W each for 80 LED lights, running for 8 hours a day, for 300 days annually.
- <sup>7</sup> The amount of savings in absolute terms is the difference in consumption before and after the implementation of energy efficiency features at the data centre, using code compliant data centres as the reference baseline.
- <sup>8</sup> Energy savings was based on estimated annual electrical consumption at Keppel DC Dublin 1. Carbon dioxide savings quoted based on the latest published All Island Average CO<sub>2</sub> Emissions of 0.393 t/MWh for 2015, Commission for Energy Regulation, July 2016.
- <sup>9</sup> When completed, the project is expected to have an installed solar capacity of 10 MW, which will generate energy savings of 11 million kWh of energy per year.

1. Keppel DHCS’ district heating and cooling systems provide a more environmentally-friendly and cost-effective alternative to conventional heating and air-conditioning.

2. The Sino-Singapore Tianjin Eco-City Water Reclamation Centre treats wastewater effluent to produce recycled water that meets China’s most stringent standards.



## Environmental Management

During the dry season, treated effluent water from the refuse leachate and waste water at Keppel Infrastructure's Senoko 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 727,702 m<sup>3</sup> of water in 2017, which is equivalent to approximately 14% of the Group's total water consumption<sup>10</sup>. This is a 150% increase from the 294,361 m<sup>3</sup> of water recycled in 2016, and over ten times the 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, an increase in rainwater harvested and the redirection of water drained during boiler shutdowns into the recycled water system.

### Waste

GRI 306-2

The Group strives to minimise waste generation, increase opportunities for reusing and recycling, as well as treat and dispose waste responsibly where other options are not practicable.

Waste is segregated at our offices, plants and yards to promote reuse and recycling. In 2017, Keppel FELs started collecting wood waste for recycling instead of sending it to landfills or for incineration. Used papers from our offices as well as scrap metals and spoil

equipment recovered from our shipyards and WTE plants are sent for recycling.

Hazardous waste generated is handled, stored and disposed in a manner that adheres to best practices and meets local regulatory requirements.

In 2017, the Group recycled 44,127 tonnes (t) of refuse, which is an 85% decrease from 297,137 t of waste in 2016. This decrease is largely attributed to a reduction in yard activities and the closure and divestment of several yards during the year. Waste recycled included ferrous scrap, grits, plastic stretch wrap, paper and other office consumables. Our Singapore operations recycled 38,195 t of waste in 2017, a 19% decrease from 47,263 t of waste recycled in Singapore the previous year.

As a Group, a total of 27,743 t of waste was sent for incineration in 2017, a slight decrease compared to 27,948 t in 2016.

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 24,067 t of waste was sent for incineration in 2017, registering a 13.8% decrease compared to 27,929 t in 2016.

As incineration of refuse is prohibited or unavailable in some countries where we operate, a total of 1,539 t of municipal waste was disposed at landfill sites in 2017, a significant drop from 3,815 t of waste

that was landfilled in 2016. The decrease is attributed to a decrease in activities at our yards, as well as Keppel FELs' new initiative of collecting wood waste for recycling.

### Emissions & Effluents

GRI 305-1 / 305-2 / 305-5 / 305-7

#### Emissions Intensity Targets

Keppel aims to achieve a 16% improvement in carbon emissions from 2020 business-as-usual levels. This is based on the national targets which the Singapore Government had disclosed in 2009. Keppel's Energy Efficiency Committee has evaluated the Group's progress towards this goal based on carbon emissions intensity, and affirmed that we are on track to achieve this target.

In support of the Paris Agreement, Singapore announced its Intended Nationally Determined Contribution of reducing greenhouse gas (GHG) emissions intensity by 36% from 2005 levels by 2030. In line with the government's commitment, we have set a new long-term target of a 28.8% reduction in carbon emissions intensity from 2010 levels by 2030 for our global operations<sup>11</sup>. Our target was derived by adjusting the national target to a shorter timeframe, as data prior to 2010 is unavailable.

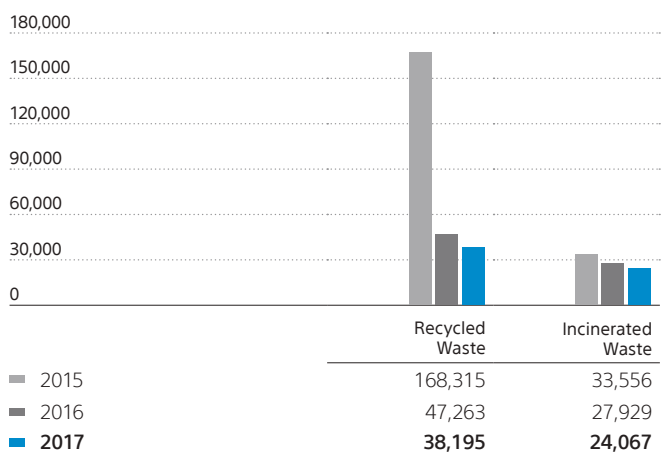
As at end 2017, our operations in Singapore, which account for 80% of the Group's total emissions, have achieved a 27.7% cumulative averaged reduction in emissions intensity from our 2010 baseline<sup>12</sup>. We are working to progressively include overseas facilities in our monitoring.

<sup>10</sup> Includes data from the Group's major subsidiaries in Singapore and overseas operations in which the Group has significant ownership, excluding Keppel DC REIT's data centres.

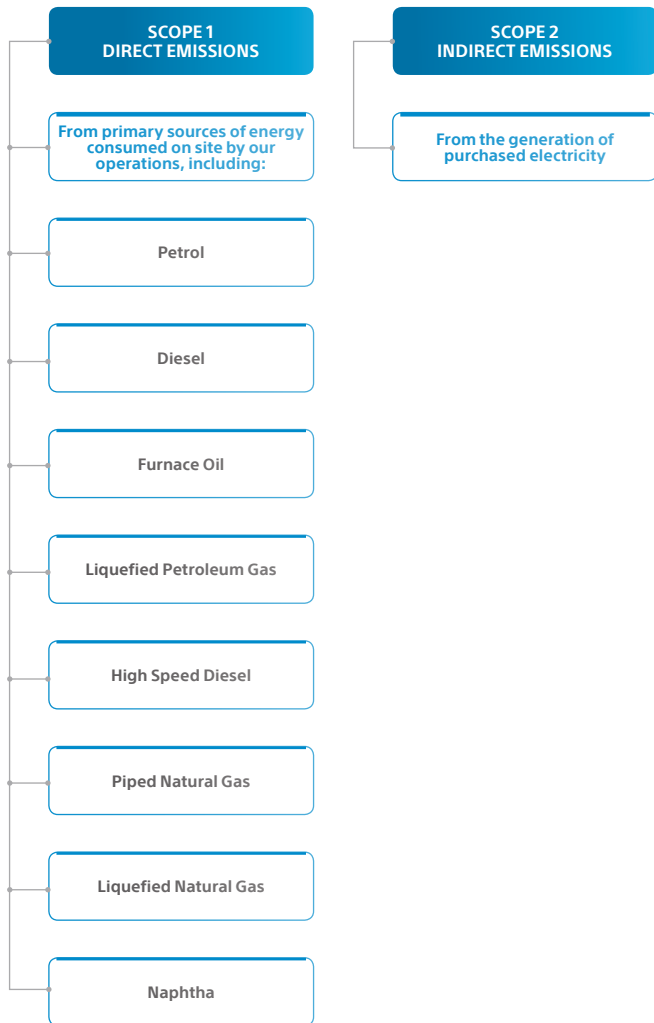
<sup>11</sup> For calculation of emissions intensity reductions, each business division first computes its base year (i.e. 2010) emissions intensity using a normalising factor relevant to its business activity. Thereafter, emissions intensity is compared on a year-on-year basis to derive a percentage reduction in terms of intensity against the previous year. The Group's emissions intensity reduction is an average of the reductions achieved by business divisions in a year. The total emissions intensity reduction is the cumulative sum of the year-on-year emissions intensity reductions that the Group has achieved from our base year to the current year in which the data is reported. The normalisation factors for our business divisions are based on its key activities and industry best practices. They are as follows: million man-hours for Keppel FELs, Keppel Shipyard, Keppel Singmarine and Keppel Logistics; gross floor area for Keppel Land and Keppel DC REIT; revenue for Keppel Data Centres; million kilowatt hours for City Gas; volume of NEWater produced for SingSpring Desalination Plant, volume of NEWater produced for the Ulu Pandan NEWater Plant; tonnes of refuse incinerated for WTE plants; and refrigeration tonnes per hour for our district heating and cooling plants.

<sup>12</sup> Due to commercial sensitivity, data from Keppel Merlimau Cogen is excluded from the calculation of emissions intensity.

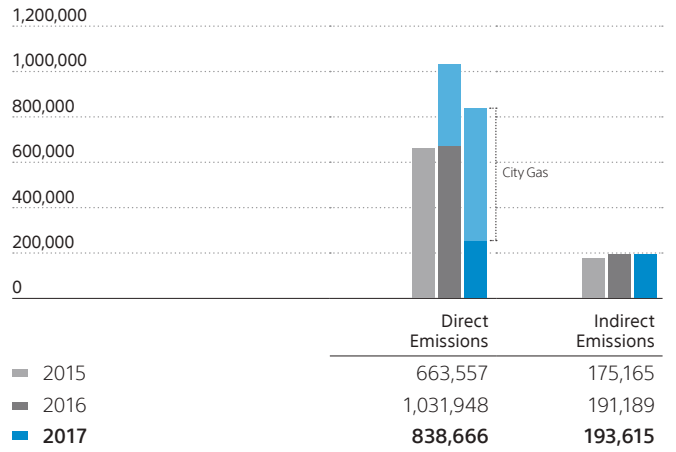
**Singapore Operations  
Recycled Waste & Incinerated Waste (t)**



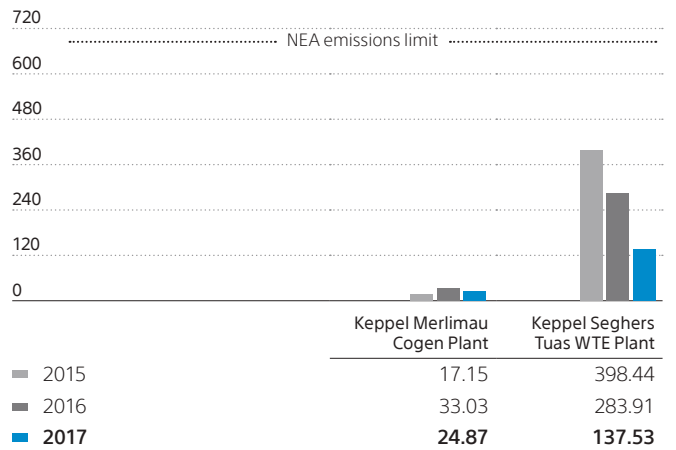
**Classification of GHG emissions from our operations:**



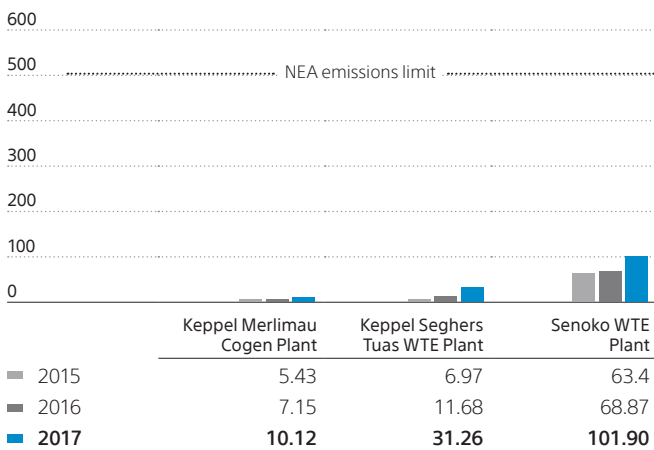
**Singapore Operations  
Direct Emissions & Indirect Emissions (t-CO<sub>2</sub>)**



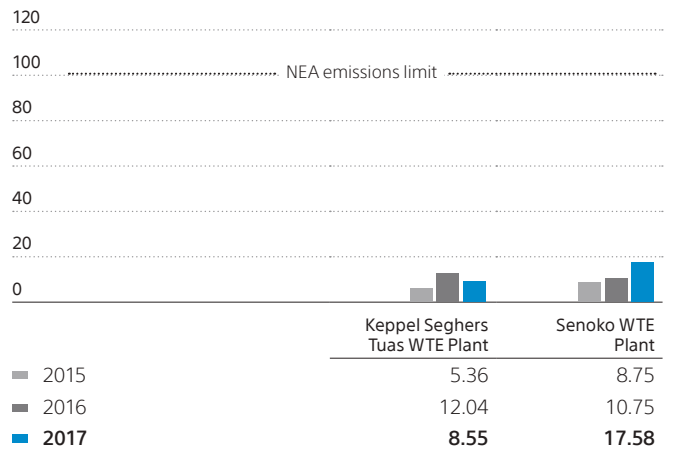
**Plants Under Keppel Infrastructure  
Nitrogen Oxides Emissions (mg/Nm<sup>3</sup>)**



**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 Management

### Carbon Emissions<sup>13</sup>

In 2017, total direct emissions from the use of fuels across the Group and the incineration of waste at WTE plants amounted to 1,065,179 t-CO<sub>2</sub>, a decrease from 1,205,749 t-CO<sub>2</sub> in 2016, while indirect emissions from electricity use was 228,551 t-CO<sub>2</sub>, which is a 2% increase from 224,146 t-CO<sub>2</sub> in 2016.

The increase in indirect emissions was due mainly to the inclusion of two new entities in our reporting boundary, SingSpring Desalination Plant and the Basslink Interconnector, and was partially offset by various energy efficiency initiatives implemented across the Group. Excluding these two facilities, the Group's indirect emissions in 2017 was 200,443 t-CO<sub>2</sub>.

Direct emissions for Singapore operations was 838,666 t-CO<sub>2</sub>, a 19% decrease from 1,031,948 t-CO<sub>2</sub> in 2016. The slight decrease in direct emissions was due mainly to the combination of green initiatives such as the replacement of diesel generators at our shipyards with electricity or renewable energy, as well as reduced yard activities. Indirect emissions from our Singapore operations was 193,615 t-CO<sub>2</sub>.

### 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 2017, dust or particulate matter emitted by Senoko WTE Plant and Keppel Seghers Tuas WTE Plant were 17.58 mg/Nm<sup>3</sup> and 8.55 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

GRI 306-3 / 307-1

There were no reports of spillages, and no sanctions pertaining to spillages that were administered by Singapore or overseas authorities on the Group in 2017.

During the year, a main contractor appointed by Keppel Land for the development of a residential project in Singapore was fined \$5,000 for noise pollution at the construction site. Mitigating actions have since been taken to prevent recurrence.

<sup>13</sup> The GHG conversion factors used for Scope 1 (direct emissions) are based on the United Kingdom's DEFRA 2017 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 2017 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.

As there is no existing international benchmark on the amount of carbon emissions from the incineration of waste, Keppel has established a methodology for estimating carbon emissions based on the 2006 IPCC Guidelines for National GHG Inventories (Volume 5 – Waste). Carbon emissions are estimated based on the fossil carbon arising from the incineration of non-organic waste content in the incineration plant, which is dry plastics in Singapore's context. The plastics content and the moisture content in the waste are determined through annual refuse sampling, which is a requirement by NEA for the annual incineration capacity test for each plant. The carbon emission factors for 2017 are one tonne of waste incinerated equals to 0.3139 t-CO<sub>2</sub> for Keppel Seghers Tuas WTE Plant, and 0.4283 t-CO<sub>2</sub> for Senoko WTE Plant.



**1.** Keppel Infrastructure actively manages the emissions from its WTE operations, to ensure it remains well below the NEA emission standard.

**2.** Recognised for its environmentally-friendly features, KDC SGP 4 was awarded the BCA-IMDA Green Mark Award (Platinum) for New Data Centres and the BCA Green Mark Award (Platinum) for Non-residential New Buildings at the BCA Awards 2017.



## Special Focus

# Green Data Centres

Through sustainable design and green technologies, we aim to reduce the environmental impact of our data centres.

Rapid growth in data creation and the energy-intensive nature of the data centre industry have given rise to the increasing need for more energy-efficient green data centre technologies and solutions.

### Sustainable Design

Keppel Data Centres incorporates environmentally-friendly features into its data centres' design and construction. In 2017, Keppel DC Singapore 4 (KDC SGP 4) received three green certifications by the Building and Construction Authority (BCA), the Info-communications Media Development Authority (IMDA) and the US Green Building Council. This includes the BCA-IMDA Green Mark Award (Platinum) for New Data Centres, BCA Green Mark Award (Platinum) for Non-residential New Buildings and LEED Gold for Core and Shell development.

The green features of KDC SGP 4 include energy-efficient systems such as a chilled water cooling system and a dynamic rotary uninterruptible power system with distributed redundant configuration, and a combination of multi-compressor chillers and centrifugal chillers to optimise efficiency at different load conditions. The facility is designed for modularity and scalability, which allows for phased fit-out works to optimise usage of power.

### Strategic Partnerships

In 2017, Keppel Data Centres Holding (KDCH) entered into several strategic partnerships to explore green innovations in data centre design, space and systems.

KDCH signed a Memorandum of Understanding with Huawei to collaborate on data centre efficiency and sustainability in the areas of green technology, high performance computing, scientific software application and networking solutions, amongst others. Following this collaboration, a Cognitive Data Centre reference site was launched to explore technologies geared towards providing virtualised and energy-efficient data centre management systems.



2

KDCH also signed a Letter of Intent with IMDA and Huawei to collaborate and explore the deployment of a high-rise green data centre that features energy-efficient technologies.

In 2017, Keppel Telecommunications & Transportation (Keppel T&T) invested US\$10 million in the Series C preferred stock funding of Nautilus, which is engaged in the business of developing water-cooled data centres, including pre-fabricated, vessel-based facilities that can be rapidly deployed globally.

By eliminating the need for energy-intensive cooling, water-cooled data centres can reduce carbon emissions

and air pollution significantly while also reducing costs. The world's first successful waterborne data centre prototype, incorporating Nautilus' patented water-cooling technology, was launched in 2015.

Together with Nautilus, Keppel T&T will be able to expand its suite of innovative solutions for data centre technology. Keppel T&T is also exploring opportunities to collaborate with other parts of the Group, such as Keppel Offshore & Marine, which brings to the table a strong track record in the design and production of floating platforms.



# Product Excellence

## Performance Overview

### What we said in 2017

Continue to invest 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.

### What we did in 2017

Keppel Urban Solutions was established as a master developer of large-scale urban developments.

Keppel Offshore & Marine delivered 10 major projects including the world's first floating liquefaction vessel conversion for Golar LNG, and secured about \$1.2 billion of non-drilling contracts.

Keppel Land acquired residential sites in Singapore, China, Vietnam, Indonesia and Thailand, as well as an office and retail mixed-use development in Shanghai, China.

Keppel Infrastructure secured a contract to design, build and operate Hong Kong's first Integrated Waste Management Facility and commenced construction of Keppel Marina East Desalination Plant in Singapore.

Keppel Logistics launched UrbanFox to offer end-to-end omnichannel logistics solutions.

Keppel-KBS US REIT was successfully listed on the Singapore Exchange on 9 November 2017, raising about US\$553 million.

### Targets

Continue to invest in R&D and innovations that support solutions for sustainable urbanisation.

Maintain high levels of customer satisfaction across our businesses.

Certify products and services to sustainability-related standards and protocols.





**Green Mark Awards**

75

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

**Project Deliveries**

10

Major projects delivered by Keppel Offshore & Marine in 2017.



SDGs highlighted in this section



**We drive innovation and tap our businesses' expertise and track records to seize new opportunities.**

**Overview**

Driven by our core values of customer-focus as well as 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 capturing opportunities in growth markets, drive collaboration and leverage core competencies across business verticals, and expand our suite of solutions.

**Management Approach**

GRI 103-1 / 103-2 / 103-3

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.

Through regular surveys and reviews, we seek to understand our customers' needs and enhance our products and services accordingly.

**Developments**

Keppel harnesses the Group's strengths and diverse solutions in energy, property,

infrastructure and connectivity to provide the latest urban solutions and create efficient and vibrant smart precincts and cities of the future.

**Offshore & Marine**

With an extensive suite of offshore and marine solutions and continuous investment in research and development (R&D), Keppel Offshore & Marine (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 2017, Keppel O&M delivered 10 major projects safely, on time and on budget. These included a Floating Liquefied Natural Gas (FLNG) vessel conversion; four Floating Production Storage and Offloading projects; a semisubmersible; an ice-class multi-purpose vessel, and a subsea construction vessel.

As cities continue to undergo urbanisation, the demand for energy will grow. However, with climate change as a priority for many governments, demand for cleaner sources of energy such as Liquefied Natural Gas (LNG) is also expected to rise. As one of the world's leaders in LNG vessel repair, Keppel O&M

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

2. Keppel Shipyard's delivery of the world's first FLNG vessel conversion, Hilli Episeyo, puts Keppel O&M ahead of the curve as a leading provider of floating liquefaction solutions.





## Product Excellence



**1.** Keppel Land launched KLOUD, a new generation serviced co-office catering to companies looking for flexible spaces.

**2.** The design of the Keppel Marina East Desalination Plant was jointly unveiled by (from left to right) Ng Joo Hee, Chief Executive, PUB; Ong Tiong Guan, CEO of Keppel Infrastructure; Loh Chin Hua, CEO of Keppel Corporation; Lee Boon Yang, Chairman of Keppel Corporation; Masagos Zulkifli, Minister for the Environment and Water Resources; Choi Shing Kwok, then-Permanent Secretary, Ministry of the Environment and Water Resources and Chiang Chie Foo, Chairman, PUB.

has built up critical knowledge for handling materials at extremely low temperatures. This experience, coupled with a strong track record in oil and gas projects, has enabled Keppel to achieve many firsts in the delivery of LNG solutions.

In 2017, Keppel O&M signed a Heads of Agreement with Pavilion Energy and PLN to explore the development of small-scale LNG solutions for West Indonesia. FueLNG, Keppel O&M's joint venture with Shell, also achieved its first commercial LNG bunker transfer in Singapore by completing truck-to-ship bunkering for Hilli Episeyo. The FLNG vessel has since been delivered to Golar LNG in 2017 for operations in offshore Kribi, Cameroon and is scheduled to commence commercial operations in 1H 2018.

Keppel AmFELS in Texas, USA, broke into the captive Jones Act market and secured a contract worth more than US\$400 million from Pasha Hawaii for the construction of two dual-fuel containerships to be built to Keppel's proprietary design. The vessels are expected to be delivered in 2020. They will be able to run completely on LNG fuel, reducing their environmental impact and increasing fuel efficiency. Energy savings will also be achieved with a state-of-the-art engine, an optimised hull form and an underwater propulsion system with a high-efficiency rudder and propeller.

Strengthening its track record as a provider of LNG solutions, Keppel Singmarine secured a contract worth over \$100 million to build

two LNG carrier vessels for Stolt-Nielsen Gas. The LNG carriers, which are expected to be completed in 2019, will be built in Keppel Nantong, China.

To streamline operations and effectively capture new opportunities, Keppel O&M reorganised its operations into two divisions – the New Builds Division, covering Offshore as well as Gas & Specialised Vessels, and the Conversions & Repairs Division.

The reorganisation integrated key functions in the New Builds Division, allowing Keppel O&M to improve efficiency and better leverage synergies and different capabilities of Keppel FELS and Keppel Singmarine. Keppel Shipyard can similarly draw on the Conversions & Repairs Division's diverse resources to undertake a wider variety of complex projects. Through these efforts, Keppel O&M is able to achieve greater efficiency and provide customers with even more competitive and reliable end-to-end solutions.

### Property

Keppel Land continued to proactively review and seek opportunities to recycle its assets to seek higher returns. In 2017, Keppel Land announced five divestments worth about \$1 billion. In tandem, Keppel Land made nine acquisitions totaling about \$1.6 billion, including residential sites in Singapore, China, Vietnam, Indonesia and Thailand, as well as an office and retail mixed-use development in Shanghai, China.

We are committed to execution excellence and building enduring relationships with our customers.

In addition, the company is ready to capitalise on the recovery of the residential market in Singapore and tap demand in overseas markets with about 16,800 launch-ready homes from 2018 to 2020.

The Keppel Group received 13 awards at the Building & Construction Authority of Singapore (BCA) Awards 2017, in recognition of the Group's commitment to environmentally-friendly design and construction for its buildings and facilities. In 2017, Keppel Land won the BCA Quality Champion (Gold) Award for Developers, while Keppel Telecommunications & Transportation (Keppel T&T) won the BCA Green Mark Award (Platinum) for Non-residential New Buildings and BCA-Info-communications Media Development Authority Green Mark Award (Platinum) for New Data Centres for Keppel DC Singapore 4 (KDC SGP 4).

To-date, Keppel Land has garnered a total of 75 BCA Green Mark awards. It has set the benchmark for all new Singapore developments and overseas commercial projects to be certified to the BCA Green Mark Gold<sup>PLUS</sup> standard, or its equivalent, and for all overseas residential developments to be certified to the BCA Green Mark Gold standard, or its equivalent. All newly acquired completed commercial buildings are also to be certified to the BCA Green Mark Gold standard, or its equivalent, within two years<sup>1</sup>.

Keppel Land also received top accolades at the Euromoney Real Estate Awards, including Best Overall Developer for Singapore, Vietnam and Myanmar. 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.

With rising real estate costs and smart technology transforming the way we work, co-working spaces have become increasingly popular globally. Co-working provides an innovative alternative to traditional office spaces, riding on the shared economy.

To meet the growing demand in this niche market, Keppel Land launched KLOUD, a new generation serviced co-office catering to companies looking for flexible spaces.

Keppel Land's flagship co-office KLOUD Keppel Bay Tower boasts 18,000 square feet (sf) of smart office space. Since its opening, the co-working space has attracted start-ups, small and medium-sized enterprises and multinational companies from a diverse mix of industries. To date, KLOUD has also been introduced in Vietnam and Myanmar, bringing Keppel Land's total serviced co-office footprint to about 60,000 sf.

<sup>1</sup> Keppel Land's environmental targets apply to all projects where it has a majority stake and/or operational control.



## Product Excellence

### Infrastructure

The Infrastructure Division comprises the Group's businesses in energy, environment and infrastructure services, as well as logistics and data centres.

Contributing to Hong Kong's goal of sustainable urbanisation, Keppel Seghers and Zhen Hua Engineering jointly secured a contract to design, build and operate an Integrated Waste Management Facility (IWMF) off the coast of Shek Kwu Chau, Hong Kong. The IWMF includes a waste-to-energy (WTE) Plant, which will feature Keppel Seghers' proven WTE technology and flue gas cleaning system.

In China, Keppel Seghers continued to build on its track record as a leading imported WTE technology solutions provider. It secured two contracts in 2017, bringing its technology packages under execution to nine projects with a total incineration capacity of close to 16,500 tonnes per day.

In Qatar, the Doha North Sewage Treatment Works received the final takeover certificate from the Public Works Authority of Qatar, and received regional accolades including the GCC Award for Sustainability and the GCC Water Project of the Year at the MEED Quality Awards 2017.

In Singapore, Keppel Infrastructure commenced construction for the Keppel Marina East Desalination Plant, a dual-mode desalination plant, in June 2017, supported by design and technical inputs from Keppel Infrastructure Services. When completed in 2020, the plant will add 30 million gallons of water per day to Singapore's water supply.

In 2017, Keppel Logistics launched UrbanFox to provide omnichannel logistics and channel management solutions. UrbanFox was launched after Keppel Logistics' strategic acquisition of a majority stake in Courex in 2016.

In recognition of its commitment to service excellence, Keppel Logistics received its 10th Singapore Domestic Logistics Service Provider of the Year award at the 2017 Frost & Sullivan Asia Pacific Best Practices Awards.

Capitalising on positive market trends, Keppel Data Centres Holding (KDCH), a subsidiary of Keppel T&T, continued to maintain its track record in building and operating high availability data centres. KDCH successfully certified all its data centres in Singapore to the ISO 9001 Quality Management System. Keppel DC Singapore 3 attained SS577 for Water Efficiency Management System and KDC SGP 4 attained both the BCA Green Mark Platinum and bizSAFE Level 3 upon its operational commencement.

### Investments

The Investments Division comprises Keppel Capital and the newly established Keppel Urban Solutions, as well as the Group's investments in M1, KrisEnergy and the Sino-Singapore Tianjin Eco-City.

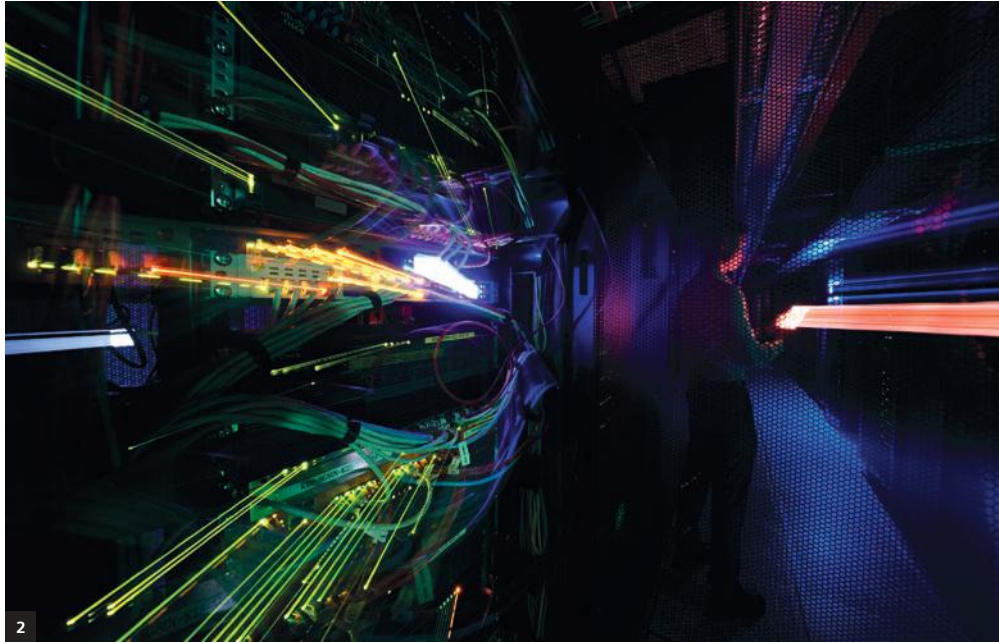
The Group's asset management business under Keppel Capital includes 100% interests in Keppel REIT Management, Alpha Investment Partners and Keppel Infrastructure Fund Management, as well as a 50% interest in Keppel DC REIT





1. *Keppel-KBS US REIT is part of the Group's strategy to expand its asset management business into new geographies and asset classes.*

2. *We continued to develop innovative data centre designs and technologies to sharpen competitiveness.*



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

Management and Keppel-KBS US REIT Management.

With a larger and integrated asset management platform, Keppel Capital is delivering stronger performance. On a fully leveraged and invested basis, total assets under management reached \$29 billion as at end-2017, up from \$25 billion as at end-2016.

In November 2017, the Keppel-KBS US REIT was listed on the Main Board of the Singapore Exchange, raising gross proceeds of approximately US\$553 million. The REIT has a portfolio of 11 quality investment assets in key US growth markets, and drew positive demand from institutional and retail investors during the international placement and public offering.

#### **Fostering Innovation**

Keppel Technology & Innovation (KTI) was launched to be a catalyst for change by sharpening the Group's focus on innovation. As a platform for co-creating and incubating ideas, KTI leverages the strong expertise, experience and track record of Keppel Offshore & Marine Technology Centre (KOMtech).

In 2017, KOMtech received the inaugural National Supercomputing Centre Outstanding High Performance Computing Industry Application Award for its research and commercial efforts to tap computational power to drive innovation and raise productivity.

In 2017, Keppel O&M undertook the development of conceptual designs of various floating solutions, such as a Cable Laying Vessel, Low Motion Semi-submersible, and Floating, Storage and Re-gasification Unit power barges, as well as the repurposing of offshore technology through the development of a floating desalination plant, and an aquaculture and offshore logistics hub.

Keppel Logistics successfully launched the use of Smart Glasses to streamline inbound and outbound tasks for all customers at the Automated Storage and Retrieval System warehouse. The use of Smart Glasses leads to higher operational efficiency and stock-take accuracy, as compared to conventional radio frequency scanners. In addition, the company continued to transition from paper-based to mobile-based stock-taking, which contributed to significant lead-time reduction and enhanced data accuracy. The company's operations in Australia, Indonesia, Malaysia and Vietnam also completed a Warehouse Management System upgrade during the year.

UrbanFox has embarked on a collaboration with the Singapore Management University - Fujitsu - A\*Star's Centre of Excellence, to study the travelling patterns of delivery personnel so that orders can be matched efficiently on Urbanfox's crowdsourcing platform.

## Product Excellence



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

### Customer Health & Safety

GRI 416-1

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.

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 since 2016. The guidelines require safety and health risks to be incorporated into the early conceptual and planning phases of a

project, enabling designers and consultants to reduce these risks through good design and effective project planning. In addition, all Keppel Land managed development projects and properties in Singapore, China and Vietnam have attained OHSAS 18001 Occupational Safety & Health Management System certification. These account for 80% of Keppel Land's total ongoing developments.

### Customer Engagement

GRI 102-43

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.

Keppel FELS conducts customer surveys every four months, using questionnaires and face-to-face interviews. The company achieved an overall average score of 4.9 in 2017, when assessed on a scale of 1 to 6 (1 being very poor and 6 being excellent). Overseas, Keppel AmFELS and BrasFELS also conducted similar customer surveys with overall positive results. Feedback from customers is reviewed and documented in a Voice of Customers report.

Keppel Shipyard received an improved overall score of 5.8 out of 6 for customer satisfaction in 2017, up from 5.7 in 2016.

Prior to project commencement, Keppel Shipyard ensures alignment in expectations between the project teams and clients through meetings. Keppel Shipyard also conducts post-project reviews to identify key areas for improvement.

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 2017, Keppel Land conducted service quality surveys for 14 completed projects. An average of 95% of the respondents indicated that they were satisfied with the services rendered in the management and operations of the developments.

At Keppel Logistics Singapore, customer satisfaction improved, with 100% of customers rating services as "good" or "better" compared to 94% in 2015. The company received positive feedback on its productivity and cost-saving measures.

In China, Keppel Logistics Foshan and Foshan Sanshui Port have consistently achieved a high level of customer satisfaction of above 90% since 2015. Monthly customer visits are conducted, and feedback is consolidated for management review and continuous service improvement.

Keppel Data Centres maintained an average score of 3.5 out of 5 in its annual customer survey. Customers' feedback is consolidated and reviewed regularly. Keppel Data Centres achieved a customer renewal rate of over 80% in 2017.

**Compliance**

**GRI 416-2**

Keppel subscribes to best practices and complies with all applicable legislations and requirements. 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 2017.

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

1. *Keppel O&M continues to work closely with customers to provide competitive and reliable solutions.*

2. *Keppel Logistics continued to upgrade its warehouses to enhance productivity.*



2



## Product Excellence

## Special Focus

## Building Sustainable Cities



The Sino-Singapore Tianjin Eco-City is developed in accordance with a comprehensive set of Key Performance Indicators that cover various aspects of sustainability.

The Sino-Singapore Tianjin Eco-City (Eco-City) is on track to realise its vision of becoming a model for sustainable urbanisation in China. Leading the Singapore consortium, Keppel works with its Chinese partner to guide the 50-50 joint venture – Sino-Singapore Tianjin Eco-City Investment and Development Co., Ltd. (SSTEC) – in its role as master developer of the Eco-City.

The Eco-City, which celebrates its 10th anniversary in 2018, has transformed from a barren, saline and alkaline site to an emerging green city that has been lauded for its eco-friendly features, such as green transport, renewable energy, green buildings as well as waste reduction and recycling initiatives. 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.

The Eco-City has received numerous accolades, including being named China's first National Green Development 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 Building & Construction Authority of Singapore, encourages test-bedding and demonstration of green building features, energy-saving building technologies and renewable energy adoption.

#### Steady Progress

To date, over 80,000 people live and work in the Eco-City, which boasts over 6,000 registered companies<sup>1</sup>, 17 schools with close to 10,000 students, three neighbourhood centres, four libraries, three health services centres and a hospital among its amenities. Construction of the new Z4 rail line is on track for completion in 2020, and will connect the Eco-City to surrounding regions.

Demand for the Eco-City's homes remained strong in 2017, with over 4,000 homes sold despite a series of cooling measures driving a softening of Tianjin's overall home sales market. Reflecting the market's growing confidence in the Eco-City, three residential land parcels were sold at around RMB 13,800 per square metre of gross floor area at a land auction in early-2017.

With the focus of the Eco-City's development shifting to the Central District, SSTEC has embarked on a new urban design scheme for the district, which will become the main commercial, hotel and recreation hub of

Our various business units continued to contribute towards the growth of the Eco-City by providing solutions for urban living, clean environments and connectivity.

the Eco-City. Meanwhile, work on the Sino-Singapore Friendship Garden and Sino-Singapore Friendship Library is on-going.

In February 2017, Singapore's Deputy Prime Minister Teo Chee Hean and Minister for National Development and Second Minister for Finance Lawrence Wong met their Chinese counterparts in Beijing for the Joint Steering Council meeting, affirming the Eco-City's progress.

#### Providing Urban Solutions

The various business units of the Keppel Group continued to contribute towards the growth of the Eco-City by providing solutions for urban living, clean environments and connectivity.

In 2017, Keppel Land China sold 1,017 homes in the Eco-City. As at end-December 2017, Keppel's Seasons Garden has sold 97% of its 1,190 units, Seasons Residences has sold over 62% of its 380 launched units, and Seasons Heights has sold all of its 124 launched units. Meanwhile, Waterfront Residences was almost fully sold as at end-December 2017.

Other businesses within the Group also contributed to the Eco-City's development. Keppel T&T's logistics distribution centre in the Eco-City maintained its occupancy at an average of 65% for 2017.

The Sino-Singapore Tianjin Eco-City Water Reclamation Centre, a joint venture between Keppel Infrastructure and Tianjin Eco-City Investment and Development Co., Ltd, was officially opened by Singapore's Deputy Prime Minister Tharman Shanmugaratnam in June 2017. The Centre treats wastewater effluent from an existing wastewater treatment plant to produce recycled water that meets China's most stringent standards for urban miscellaneous water consumption.

As the Eco-City continues to mature, the Group will continue to leverage the competencies of its various businesses to contribute to the Eco-City's development, and strengthen the Group's track record of being a solutions provider for sustainable urbanisation.

<sup>1</sup> Population figure and number of companies registered include the Tourism District and Central Fishing Port.

1. Celebrating its 10th anniversary in 2018, the Sino-Singapore Tianjin Eco-City is a model for sustainable urbanisation for other cities in China.

2. Over 80,000 people live and work in the Eco-City, which boasts of quality housing, public amenities and commercial facilities.





# Safety & Health

## Performance Overview

### What we said in 2017

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.

### What we did in 2017

Achieved a reduction in Accident Frequency Rate (AFR) compared to 2016 levels.

Harmonised safety standards for High Impact Risk Activities in all our global operations.

Standardised incident investigation and root cause analysis technique for the Group.

Conducted a Safety Leadership Workshop for all Singapore frontline managers.

Invested in technologies for safer work processes.

### Targets

Execute our Zero Fatality Strategy and reduce workplace fatalities to zero.

Reduce AFR compared to 2017 levels.

Implement an electronic global Health, Safety and Environment management system to streamline data capture, analyse data, and develop intervention programmes.

Invest in technologies to mitigate risk and drive improvements in safety performance.







**Awards**

**36 Awards**

Conferred on the Keppel Group at the Workplace Safety and Health Awards.

**Investment**

**\$28m**

Invested to enhance safety systems and skillsets across the Group.



SDGs highlighted in this section



**Safety is our core value. 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**

GRI 103-1 / 103-2 / 103-3

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 Zero Fatality Strategy. Introduced in 2016, the strategy outlines actionable items to reduce workplace fatalities to zero through five strategic thrusts: building a high-performance safety culture, adopting a proactive approach to safety management, leveraging technology to mitigate safety risks, harmonising global safety practices and competency, and streamlining learning from incidents. Several key initiatives

were implemented in 2017 to make headway in our Zero Fatality Strategy. These include the following:

- Establishment of a Group-wide global standard for managing High Impact Risk Activities.
- Implementation of a standardised incident investigation and root cause analysis technique.
- Global safety leadership coaching programmes to train and empower frontline managers.
- Reinforcement of the five Key Safety Principles and Life-Saving Rules through videos and campaigns.

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.



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

## Safety & Health

### 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.

Our business units also strive to achieve HSE certifications in line with global best practices. Most of our key business units and worksites, both in Singapore and overseas, are certified to the OHSAS 18001 Occupational Safety & Health Management System and the ISO 14001 Environmental Management System.

As part of continuous improvement efforts, we are working to meet the requirements under the new ISO 45001 Occupational Health & Safety Management System, which provides a robust and effective set of processes for improving safety in global supply chains.

### Board & Management Oversight

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

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 and establishing a safety framework to ensure that consistently high safety standards are maintained across our business units.

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 yards, plants, worksites, offices and facilities to engage operational staff, understand the challenges they face on the ground, and reinforce key safety messages and guidelines.

In March 2017, senior management from Keppel Corporation visited Keppel Infrastructure Trust's Senoko Waste-to-Energy Plant. The group inspected safety processes at the plant and was briefed on the plant's

operations, key performance indicators, innovation projects and HSE initiatives such as safety inductions and site inspections under the 'Management of New Workforce' and 'Inspection for Safety Compliance Assurance' programmes respectively.

In October 2017, Keppel Corporation, Keppel O&M and Keppel Land BSCs conducted joint visits to Keppel Subic Shipyard and SM-KL Towers in the Philippines.

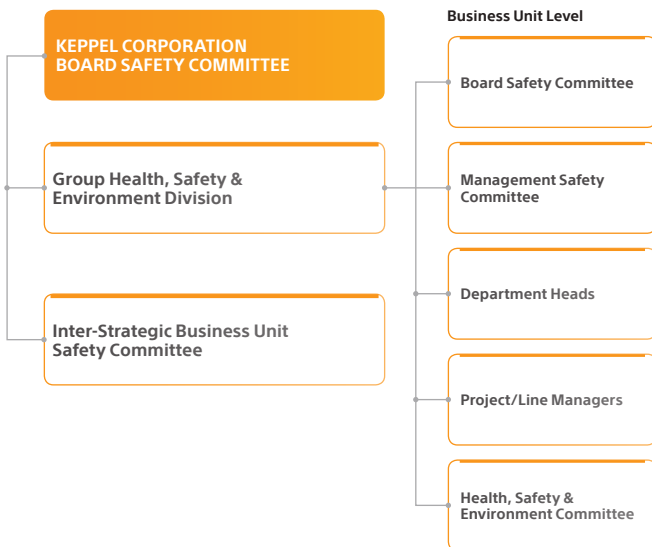
### Performance

#### GRI 403-2

Our business units abide by the Workplace Safety and Health (WSH) Act and Work Injury Compensation Act by Singapore's Ministry of Manpower (MOM), which requires employers to report workplace accidents, dangerous occurrences and occupational diseases to MOM<sup>1</sup>.

<sup>1</sup> Reportable incidents include: a workplace accident that results in the death of an employee, self-employed person or non-employee; a workplace accident that results in the injury of an employee who is given more than three consecutive days of medical leave or hospitalised for at least 24 hours; and a workplace accident that results in the injury of a self-employed person or non-employee who receives treatment in hospital.

### Group HSE Structure



### 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:

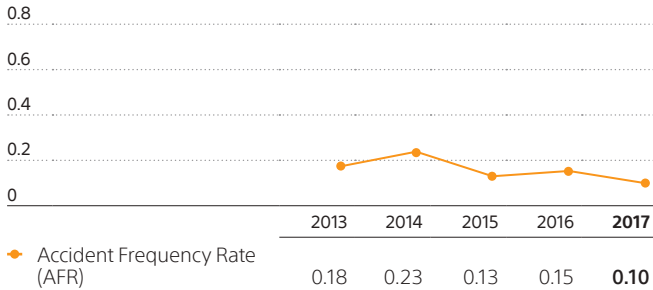
- Make adequate resources available
- Promote a strong HSE culture
- Adopt this policy in all its business premises where it has a controlling influence
- Set improvement targets and monitor progress through performance management, audits and periodic reviews
- Comply with the requirements of statutory 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 HUI  
 Chief Executive Officer  
 Keppel Corporation Limited  
 Date: 16 April 2015

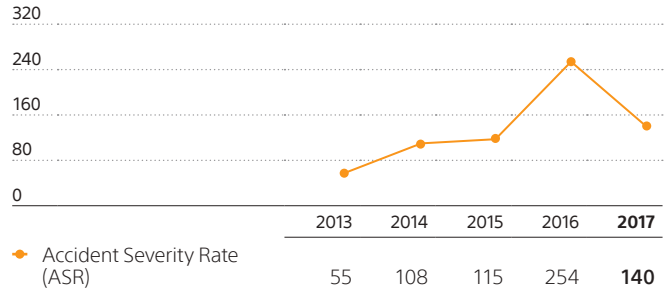
**Keppel Group (Global)**  
**Accident Frequency Rate (2013–2017)**

reportable accidents per million man-hours



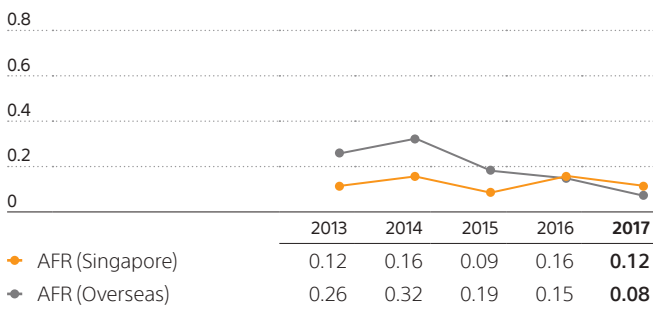
**Keppel Group (Global)**  
**Accident Severity Rate (2013–2017)**

man-days lost per million man-hours



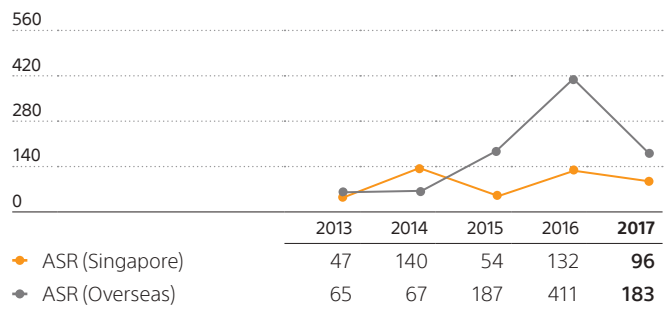
**Keppel Group (Singapore & Overseas)**  
**Accident Frequency Rate (2013–2017)**

reportable accidents per million man-hours



**Keppel Group (Singapore & Overseas)**  
**Accident Severity Rate (2013–2017)**

man-days lost per million man-hours



At worksites, safety stand-downs are conducted when incidents occur or when hazards are spotted. Reportable incidents and near misses are also promptly reported to senior management.

As a result of our concerted efforts, our Accident Severity Rate (ASR) and Accident Frequency Rate (AFR) decreased in 2017.

In 2017, despite our best efforts, we suffered three fatalities globally and reported a total ASR of 140 man-days lost per million man-hours, compared to 254 the year before. ASR for our direct workforce was 233 man-days lost per million man-hours, while ASR for our contract workforce was 80 man-days lost per million man-hours.

We are deeply saddened by the loss of our colleagues and have thoroughly investigated the root causes, which were related to working in the Line of Fire and Heavy Vehicles. We determined the contributing factors and identified steps to prevent similar incidents in the future. Lessons learnt were shared across the Group.

Our total AFR for 2017 decreased to 0.10 accidents per million man-hours from 0.15 the year before. AFR for our direct workforce was 0.12 accidents per million man-hours, while AFR for our contract workforce was 0.09 accidents per million man-hours.

As the members of our workforce who are exposed to health and safety risks are largely male, the presentation of AFR and ASR data according to gender was assessed to be immaterial.

**Recognition**

The Group was conferred 36 WSH Awards in 2017 by MOM and Singapore’s WSH Council. This is the highest number of awards won by a single organisation this year.

Of the 36 awards, Keppel O&M received 28 awards under the Safety and Health Award Recognition for Projects category, which recognises companies with good project safety and health management systems.

Keppel FELS and Keppel Singmarine, subsidiaries of Keppel O&M, also clinched the WSH Performance (Silver) Awards for exemplary safety performances and implementation of strong WSH management systems.

Keppel Merlimau Cogen, Keppel FELS, Keppel DHCS and Keppel Logistics garnered WSH Innovation Awards, which recognise companies for their efforts in creating solutions which help to improve safety at the workplace (see page 67).

In addition, Saravanan Marimuthu, Senior Welding Superintendent at Keppel FELS, and Mani Rajasekaran, Assistant Control and Instrument Engineer at Keppel Merlimau Cogen, received the Supervisor Awards for their exemplary performances in ensuring a safe working environment for workers under their charge.

Keppel FELS received the Safety Initiative Award at the Seatrade Maritime Awards Asia for its ‘Intervene! Don’t look away’ campaign which was launched in 2017.

## Safety & Health

# 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**

Keppel AmFELS also clinched the 2016 American Equity Underwriters Safety Award for a Large Shipyard in May 2017. Companies were assessed based on the major components of their safety management system.

In China, Keppel Nantong Shipyard received a Certificate of Honour for its safety practices by the Nantong Gangzha District Government in 2017, and also attained Level One Safety Standardisation.

Keppel Land China's Tianjin Safety Awareness Centre (SAC) clinched the Honorary Award at the Global Trends Awards 2017, organised by a subsidiary of People's Daily Online. The Tianjin SAC is the first in China to be built by a developer. The centre provides training for contractors' employees to enhance their safety awareness.

Spring City Golf & Lake Resort in Kunming, China was awarded the Work Safety Standardisation Certificate by China's State Administration of Work Safety in January 2017.

### Building Skillsets

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

In 2017, we invested approximately \$28 million in enhancing safety-related infrastructure, upgrading systems and building knowledge and skillsets across the Group.



1. Keppel Land China's SAC provides training for contractors' employees and fosters a culture of safety.

2. During the Keppel Group Safety Convention, frontline managers from different business units shared their views on strengthening the Group's safety culture.



Our commitment to innovation extends to improving the safety of work processes. At the 11th annual Keppel Group Safety Convention, 34 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.

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 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 SACs in Ho Chi Minh City, Vietnam; Johor Bahru, Malaysia; Jakarta, Indonesia and Tianjin, China, provide mandatory training for contractors' employees and foster a culture of safety across Keppel Land's supply chain. Keppel Land is currently developing a mobile SAC to be launched in Wuxi, China.

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

On 7 November 2017, over 450 employees, partners, contractors and subcontractors reaffirmed their collective commitment to safety at the 11th edition of the Keppel Group Safety Convention with the theme, 'Driving HSE Excellence as *OneKeppel*'.

Gracing the event as Guest-of-Honour was Ho Siong Hin, Commissioner for WSH, MOM. The convention also saw the continuation of the annual Keppel Group Safety Awards which recognised 21 employees who have gone the extra mile to enhance safety at their worksites. The convention also featured a lively sharing session by seven frontline managers who discussed how employees can take action to reinforce safety at work and at home.



### 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 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, frontline workers in particular, with guidance on preventive measures to keep themselves safe.

Keppel FELS held its annual month-long HSE Excellence Promotion campaign in August 2017. Themed, 'Safety in Mind, Responsibility is Mine', the campaign aimed to inculcate a strong safety mindset in workers through briefings, safety poster competitions and games.

In May 2017, about 200 of Keppel Land's board members, senior management, contractors, consultants and staff came together to reaffirm their commitment to safety and to share best practices at Keppel Land's Workplace Safety and Health Recognition Event 2017. In China, a similar convention was held in Shanghai during the same month, where over 190 employees, customers and contractors exchanged experiences and ideas to strive for an incident-free workplace.

Keppel Infrastructure held its fourth annual HSE Roadshow in Singapore in

February 2017. Around 300 employees and contractors were briefed on the company's HSE performance in 2016, lessons learnt from recent HSE-related incidents, as well as targets and action plans for the year ahead.

Keppel Housing, which manages the accommodation of our yards' direct workers, regularly organises HSE Roadshows 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.

### Partnerships

GRI 102-13

#### 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, CEO of Keppel O&M and Managing Director (Offshore) of Keppel O&M; Chor How Jat, Managing Director (Conversions & Repairs), Keppel O&M; and Abu Bakar Bin Mohd Nor, Managing Director (Gas & Specialised Vessels), Keppel O&M, are members of the WSH Council (Marine Industries) Committee.

Abu Bakar Bin Mohd Nor was also elected as the new President of the ASMI Council during its 49th Annual General Meeting held on 23 May 2017.



## Safety & Health

Yong Chee Min, Director of HSE, Risk and Compliance at Keppel O&M, is a member of the WSH National Work at Heights Safety Taskforce.

Mohamed Sahlan Bin Salleh, Executive Director (Operations), New Builds, Keppel O&M, took the helm from Yong Chee Min as Chairman of the ASMI WSH Committee. Mohamed Sahlan Bin Salleh was also elected into the WSH Council (Marine Industries) Committee.

Keppel's HSE professionals also contribute towards upholding the industry's safety standards. Derek Sim, Assistant General Manager (HSE) of Keppel FELs, and Mohamed Aliffi Bin 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.

### 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 customers, suppliers, regulators and industry associations to implement initiatives and encourage our subcontractors to attend regular safety training. Keppel is also a sponsor of annual national safety events.

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 Seghers, 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, and ensure that their subcontractors meet the standards set by the WSH Council.

### Industry Sharing

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

In 2017, Keppel O&M participated in the National Workplace Safety and Health Campaign and showcased projects such as the Coupler Repair Workbench, which won the WSH Innovation Award at the WSH Awards 2015.

As part of the World Congress on Safety and Health at Work, Keppel O&M hosted a delegation from the WSH Council on a visit to its facilities, including the Keppel Safety Training Centre and the Keppel Wellness Gallery, where delegates were introduced to initiatives such as the company's High Impact Risk Activities training.

### Health & Wellness

The Group promotes exercise programmes and healthy living campaigns to 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. 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.

On 10 February 2017, Keppel Shipyard officially opened the Keppel Wellness Gallery which features interactive health exhibits to educate employees on the importance of having proper nutrition, an active lifestyle and good mental health. During the opening ceremony, Keppel Shipyard also launched the Total Workplace Safety and Health 2020 programme, a four-year strategic plan for an incident-free work environment.



## Special Focus

## Promoting Safety Innovations

Across the Keppel Group, we continue to develop innovative solutions to enhance safety.

In developing innovative and effective safety solutions, we aim to improve work processes and enhance safety. In 2017, Keppel Merlimau Cogen, Keppel FELS, Keppel DHCS and Keppel Logistics garnered Workplace Safety and Health (WSH) Innovation Awards at the WSH Awards organised by Singapore's WSH Council and Ministry of Manpower.

Keppel Merlimau Cogen, the operator of a power plant in Singapore, garnered the innovation award for its Sea Water Intake Guide Cleaning project, which improved safety by eliminating the use of divers to clean the power plant's stop gate guides. Its mechanical spring-loaded scraper shaved off barnacles and marine growth effectively, improving efficiency and helping to achieve cost savings of about \$80,000 per annum.

Keppel FELS received the innovation award for the Handy Bolt and Nut Tightener, which improved work productivity and reduced the risk of finger injuries. Its spring lock

mechanism can be adjusted to fit bolts and nuts of different sizes, and its neodymium alloy magnets firmly secure the bolt and nut in place during the tightening and dismantling of flanged pipe connections.

Keppel DHCS, a subsidiary of Keppel Infrastructure, clinched the innovation award for its Multi-Purpose Lifter, which reduced the risk of musculoskeletal injuries from the lifting of heavy manhole covers, and the risk of workers falling into the valve chamber during the maintenance and inspection of district cooling systems.

Keppel Logistics won the innovation award for redesigning the manual and laborious process of cable cutting and re-spooling. The project reduced the risk of injuries and improved productivity by 30% by implementing changes such as lowering the height of the re-spooling unit, recreating the cable cutting unit with metal guard panels to prevent the drum from rolling over, and installing a full rotational function to make spooling the cables easier.

1. Keppel O&M works closely with its contractors and subcontractors to maintain high safety standards throughout its workforce.

2. The Handy Bolt and Nut Tightener by Keppel FELS reduces the risk of finger injury, especially when working in constrained spaces.



# Labour Practices & Human Rights

## Performance Overview

### What we said in 2017

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

### What we did in 2017

Conducted the Keppel Global Employee Engagement Survey, where 87% of employees surveyed indicated that they will “go beyond the norm” to contribute to Keppel’s success.

Recorded an average of 22.6 hours of training per employee per year.

Initiated the *InnovateKeppel* programme, a key pillar of Keppel Technology & Innovation, that focuses on developing and harnessing the capabilities of our workforce to build innovation capacity.

### Targets

Continue to conduct the Keppel Global Employee Engagement Pulse Survey to track and sustain employee engagement levels.

Continue to promote diversity and equal opportunity in the workplace.

Further develop our workforce through tech-enabled and self-paced training programmes.







**Employee Engagement**

87%

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

**Local Hires**

66.9%

Of senior management are hired from local communities.



SDGs highlighted in this section



**We are committed to fair employment practices, uphold human rights principles and invest in developing and training our people.**

**Overview**

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 21,421 as at end 2017, spread across more than 20 countries. The data reported in this section takes into account significant subsidiaries and associated companies in which the Group has a stake that is equivalent to 51% or more.

In response to a challenging business environment, Keppel Offshore & Marine (Keppel O&M) continued its rightsizing efforts to streamline operations and reduce overheads. During the year, Keppel O&M’s direct global staff strength was reduced by about 25% from end 2016, while its subcontract workforce in Singapore came down by about 23% in the same period. Where possible, we redeploy manpower to other business units within Keppel where additional resources are required. Such redeployment opportunities are proactively communicated to the affected workers.

The age profile of our workforce is largely young, with 24.9% of employees under the age of 30, and 39.2% between the ages of 30 and 39. During the year, 2,116 people were hired. Overall voluntary turnover rate

was 13.4% globally, an increase from 12.3% in 2016. The increase is largely due to the headwinds faced in the offshore and marine industry, which led to some employees exploring alternative options.

**Management Approach**

GRI 102-41 / 103-1 / 103-2 / 103-3 / 401-2 / 401-3 / 404-3 / 406-1

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

In 2018, Keppel Corporation became a signatory of the United Nations (UN) Global Compact. Keppel is committed to the Compact’s 10 universal principles, which include principles on human rights and labour practices.

**Human Rights**

Keppel Corporation and our Group of Companies uphold and respect the fundamental principles set out in the 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.

1. *Our diverse and inclusive workforce with a broad range of backgrounds, perspectives and experiences drives innovation and makes our business more resilient.*
2. *In May 2017, leaders from Keppel FELS Employees Union engaged President of Singapore, Halimah Yacob who was then-Speaker of Parliament, in a dialogue session to discuss issues relating to employees’ well-being.*



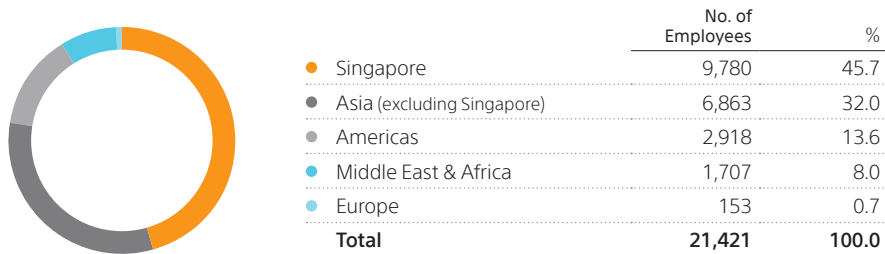


## Labour Practices & Human Rights

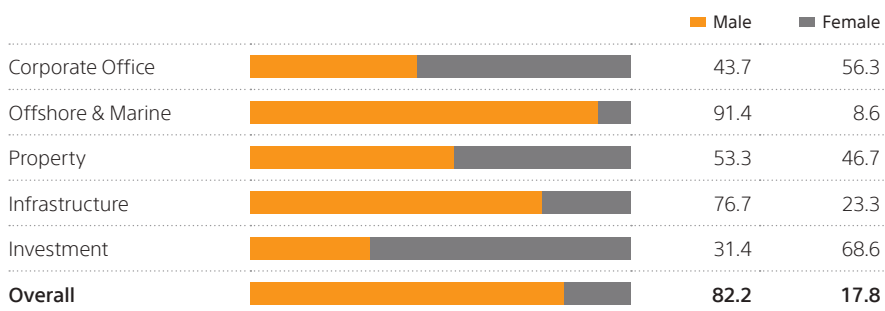
### Global Workforce

GRI 102-8 / 405-1

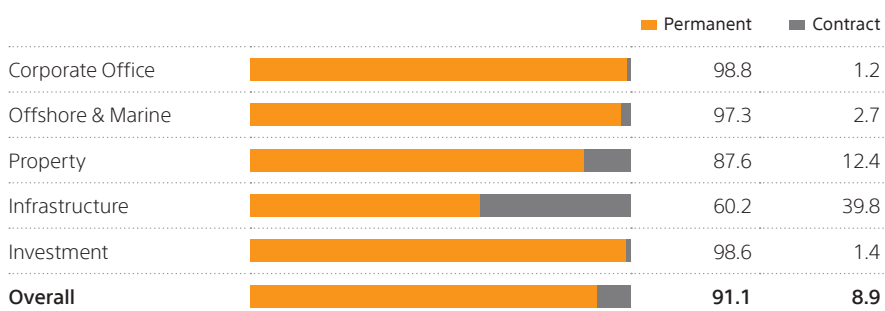
#### Distribution by Region



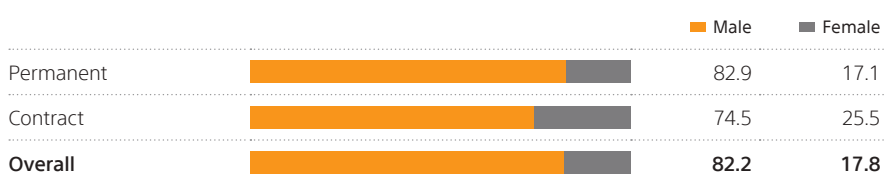
#### Distribution by Segment & Gender (%)



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



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



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

Our commitment to human rights is 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 and collaborative relationship with them. Approximately 33.6% 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.

Across our businesses worldwide, there were 29 grievance cases reported in 2017, all of which have been resolved.

#### Fair Employment Policies & Practices

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

In Singapore, Keppel adheres to the Tripartite Guidelines on Fair Employment Practices and endorses the Employers' Pledge of Fair Employment Practices, which is 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 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 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 2017, 17.8% of our employees are female, compared to 15.7% in 2016. We recognise that there are certain segments in our businesses, such as offshore and marine, which tend to attract larger proportions of male employees due to the nature of the jobs. At our corporate office and in certain segments of our businesses, such as investment, more than half of our employees are female. We value diversity and inclusion, and are committed to the principle of equal employment opportunity.

We believe that hiring from local communities<sup>1</sup> 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, 66.9% of senior management and 60.7% of our employees are citizens or permanent residents of the countries in which they work.

### Distribution by Region & Gender (%)

	Male	Female
Singapore	86.0	14.0
Asia (excluding Singapore)	70.1	29.9
Americas	91.0	9.0
Middle East & Africa	96.4	3.6
Europe	66.0	34.0
<b>Overall</b>	<b>82.2</b>	<b>17.8</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	14.9	36.0	32.2	16.9
Offshore & Marine	25.7	39.7	20.4	14.2
Property	23.6	40.4	25.0	11.0
Infrastructure	23.8	34.6	25.5	16.1
Investment	20.5	42.4	28.1	9.0
<b>Overall</b>	<b>24.9</b>	<b>39.2</b>	<b>22.0</b>	<b>13.9</b>

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

	Post-graduate	Bachelor's Degree	Post-Secondary/Pre-U/Vocational	Secondary	Primary & below
Corporate Office	10.7	69.0	14.2	5.7	0.4
Offshore & Marine	3.7	17.4	28.0	37.3	13.6
Property	5.7	43.5	22.1	26.6	2.1
Infrastructure	4.4	31.4	26.7	33.2	4.3
Investment	16.2	70.5	9.5	2.4	1.4
<b>Overall</b>	<b>4.4</b>	<b>24.5</b>	<b>26.5</b>	<b>34.3</b>	<b>10.3</b>

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

## Labour Practices & Human Rights

### Global Workforce

GRI 202-2 / 401-1

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

	Local Hires	Foreigners
Singapore	93.1	6.9
Asia (excluding Singapore)	53.6	46.4
Americas	35.0	65.0
Middle East & Africa	0.0	100.0
Europe	66.7	33.3
<b>Overall</b>	<b>66.9</b>	<b>33.1</b>

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

	Local Hires	Foreigners
Singapore	33.7	66.3
Asia (excluding Singapore)	98.5	1.5
Americas	96.0	4.0
Middle East & Africa	0.4	99.6
Europe	94.8	5.2
<b>Overall</b>	<b>60.7</b>	<b>39.3</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	35.0	25.0	30.0	10.0
Offshore & Marine	43.1	30.1	13.1	13.7
Property	27.6	52.2	16.8	3.4
Infrastructure	34.6	41.7	19.9	3.8
Investment	39.6	33.3	25.0	2.1
<b>Overall</b>	<b>34.1</b>	<b>41.7</b>	<b>18.0</b>	<b>6.2</b>

There were no reported incidences of discrimination raised by our employees in 2017.

#### Provision of Benefits

Our employees are provided with a comprehensive range of benefits that may include paid vacation leave, 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 2017, 78 female employees in Singapore went on maternity leave, of which 77 returned to work after their leave.

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

GRI 404-1 / 404-2

We encourage employees to develop and reach their full potential. The overall average training hours per employee for our key operations in Singapore was approximately 22.9 hours. Globally, the overall average training hours per employee was approximately 22.6 hours, with an average of 20.2 hours for females and 23.1 hours for males<sup>3</sup>.

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

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.

<sup>2</sup> Senior management is defined as the top three individuals within each operating business unit with the highest levels of executive management.

<sup>3</sup> Reported training hours in this section excludes on-the-job training.

### 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 (SgIS) since 2012. The SgIS 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.

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 2017, seven employees under this scheme completed their NITEC and Higher NITEC education.

### 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 at all levels of the company in furthering their education. In 2017, the Group sponsored 23 employees in pursuing further studies.

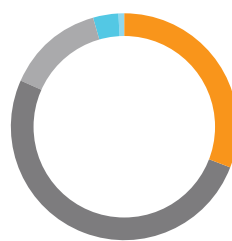
Keppel Young Leaders provides a centralised platform to nurture young talents across the Group. To cultivate innovative, entrepreneurial and global mindsets, Keppel Young Leaders are given opportunities to work on cross-business assignments under the mentorship of senior management. Through annual symposiums, hackathon challenges and dialogue sessions with industry leaders, they build networks with peers in other business units and engage 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.

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

	Male	Female
Corporate Office	47.5	52.5
Offshore & Marine	73.9	26.1
Property	54.1	45.9
Infrastructure	74.4	25.6
Investment	29.2	70.8
<b>Overall</b>	<b>61.2</b>	<b>38.8</b>

### New Hires by Region



	No. of Employees	%
Singapore	656	31.0
Asia (excluding Singapore)	1,076	50.8
Americas	294	13.9
Middle East & Africa	74	3.5
Europe	16	0.8
<b>Total</b>	<b>2,116</b>	<b>100.0</b>

### Average Training Hours by Employee Category (hours)

Senior Management	24.8
Managerial	26.2
Executive	22.7
Non-Executive	18.7
Industrial/General	23.5






## Labour Practices & Human Rights







### Global Workforce

GRI 401-1

#### Annual Employee Turnover<sup>4</sup> and Turnover Rate<sup>5</sup>

		Turnover Rate (%)	Turnover (No. of employees)
2017		13.4	2,872
2016		12.3	–
2015		8.9	–

#### Employee Turnover<sup>4</sup> and Turnover Rate<sup>5</sup> by Region

		Turnover Rate (%)	Turnover (No. of employees)
Singapore		17.0	1,662
Asia (excluding Singapore)		11.3	778
Americas		2.7	78
Middle East & Africa		19.5	333
Europe		13.7	21
<b>Overall</b>		<b>13.4</b>	<b>2,872</b>

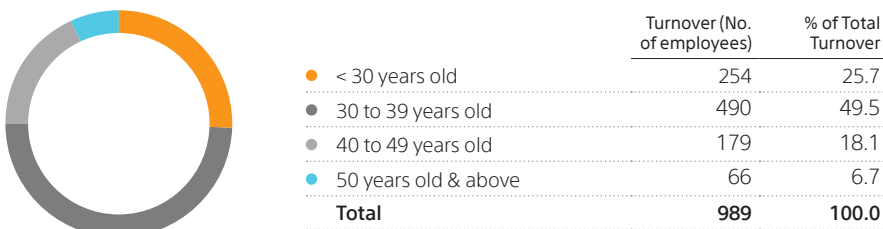
Keppel O&M Management Trainees undergo comprehensive training through job rotations and mentorship programmes designed to give candidates holistic exposure to the wide spectrum of Keppel O&M's operations. Similarly, Keppel Land offers its Management Associates hands-on and in-depth learning opportunities through job rotations 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's (Keppel T&T) Management Trainees go through a series of corporate and operational attachments to acquire a holistic view of the entire business.

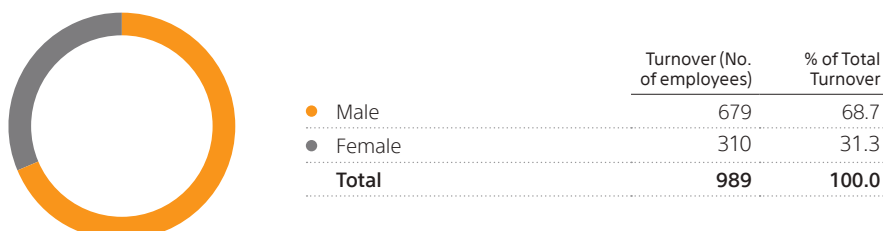
#### Keppel Leadership Institute

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

#### Employee Turnover by Age Group (Executive & Above)



#### Employee Turnover by Gender (Executive & Above)



<sup>4</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>5</sup> The 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.

them with the capability and confidence to drive our businesses into the future.

Since 2015, more than 90 promising employees from across the Group have participated in the Emerging Leaders Programme, which aims to strengthen core leadership skills. The Advanced Leaders Programme was also launched in 2017 and had 23 participants across the Group. The programme focuses on areas that include change leadership, collaboration and innovation, and uses a combination of different learning approaches such as action learning projects, workshops, site visits and networking sessions.

### Retaining Experience

Keppel supports re-employability beyond the statutory retirement age. Eligible employees 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 2017, there were 256 re-employed staff in the Group, of which 61 were re-employed in 2017.

Through initiatives such as the Keppel O&M Alumni, employees past and present have been able to stay connected and benefit from meaningful networks.

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 tap their collective wisdom and experience.

### Employee Engagement

#### Employee Engagement Survey

The biannual Keppel Global Employee Engagement Survey was conducted in 2017. The survey achieved a strong response rate of 98% from a sample size of over 5,000 employees. The Group achieved a high engagement score, with 87% of employees surveyed indicating 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 third edition of the Global Keppelites Forum, a group-wide town hall meeting, was held in February 2017. The event, which was also broadcast online, reached out to over 2,600 employees in over 70 locations globally.



1.  
We aim to attract and retain the best talents and grow the capabilities of our people.

## Labour Practices & Human Rights

During the session, Loh Chin Hua, Chief Executive Officer 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 Keppel Group.

Employees are 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 regular outdoor activities, provide opportunities for employees to interact with senior management.

Orientation sessions for new hires in 2017 included dialogue sessions with senior management. New hires are also assigned buddies who help them assimilate and guide their professional development.

### 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 Keppel Games, a series of sports competitions initiated by Keppelite Recreation Club, as well as volunteer activities organised by Keppel Volunteers.

### Supporting National Defence

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.

Keppel Corporation, Keppel FELS, Keppel Shipyard, 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 in 2015 and 2016. The Award, conferred for a period of three years, is the highest accolade acknowledging 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 in Singapore. These dormitories offer a range of amenities and recreational facilities. Activities, such as talent search competitions, are organised 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.

Staff engagement initiatives are organised throughout the year to forge stronger bonds among employees and enhance communication between management and staff.



1. Keppel Games, a series of sports competitions initiated by the Keppelite Recreation Club, promotes camaraderie, friendly competition, team-building and healthy lifestyles.

2. Employees are encouraged to upskill by tapping on the wide range of learning and development programmes offered by the Group.

## Special Focus

# Developing Our Global Workforce

People are our most valuable asset and we believe in developing our employees to their fullest potential.



Underscoring our commitment to nurture human capital, the Group invests in customised learning and development programmes catered to the different learning needs of our employees.

### **Keppel Leadership Institute**

Established in 2015, the Keppel Leadership Institute 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.

In February 2017, the Institute launched the Advanced Leaders Programme which aims to groom future Keppel leaders and develop their skills in areas such as change leadership, future orientation, collaboration and synergy as well as innovation. Over six months, 23 future leaders participated in action learning projects, workshops with Keppel Corporation's board and senior management, external company site visits and networking sessions.

### **Keppel Digital Symposium**

To cultivate an innovative mindset in employees, Keppel Young Leaders organised the inaugural Keppel Digital

Symposium in October 2017. With participants hailing from business units across the Group, the symposium pits teams against each other to present ground-breaking new ideas around the theme of digitalisation.

Prior to the symposium, a series of TechConnect talks were organised for employees to gain a deeper understanding of emerging technologies and their potential impact on businesses. The series featured renowned speakers from technology solutions providers such as IBM and AECOM, and covered topics like blockchain technology and augmented reality.

### **Keppel Technology Engineering Development Programme**

After a successful first edition in 2016, the KTED programme commenced its second run in 2017. In collaboration with the Singapore University of Technology and Design, the KTED programme provides Keppel Offshore & Marine employees the opportunity to learn from industry leaders, researchers and academics from renowned institutions. The programme covered a range of topics, from gas technology to design thinking and disruptive innovation.



# Communities

GRI 203-2 / 413-1

## Performance Overview

### What we said in 2017

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.

### What we did in 2017

Sponsored and participated in a wide range of community initiatives, investing \$4.5 million in social causes.

Achieved about 12,000 hours of community service, an increase of 4,000 hours over the 8,000 hours in 2016.

Renewed partnership with Esplanade – Theatres on the Bay for Keppel Nights.

### Targets

Achieve over 10,000 hours of staff volunteerism worldwide.

Support initiatives to promote the social development of local communities where we operate.





**Investment in Social Causes**

**\$4.5m**

Invested in social causes in 2017.

**Volunteerism**

**12,000hrs**

Of community work achieved by Keppel Volunteers.



SDGs highlighted in this section



**We uplift communities through programmes that deliver enduring socio-economic benefit.**

**Overview**

Keppel aims to deliver lasting socio-economic benefit to the communities where we operate. In engaging and nurturing communities, we are focused on achieving 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**

GRI 103-1 / 103-2 / 103-3

Community development is a material topic for Keppel. Keppel strives to champion holistic corporate giving in Singapore, and is a Founding Member of the

'Company of Good' programme by Singapore's National Volunteer & Philanthropy Centre (NVPC). In 2017, Keppel Corporation was recognised as a Champion of Good by NVPC for its exemplary corporate giving efforts.

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 close to \$30 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 2017, the Group spent \$4.5 million on social investments. Meanwhile, Keppel Volunteers achieved about 12,000 hours of community service, an increase of 4,000 hours over the 8,000 hours in 2016.

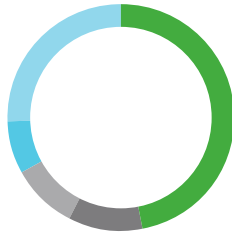
1. Our volunteers engage young children at the Keppel Centre for Art Education at National Gallery Singapore. The Centre was recently refreshed with new exhibits incorporating elements that cultivate a sense of curiosity and exploration among children.

2. The Keppel Discovery Wetlands was officially opened in March 2017 by Prime Minister of Singapore Lee Hsien Loong (fifth from right). Also in attendance were Singapore's Minister for National Development and Second Minister for Finance, Lawrence Wong (fifth from left); Chairman of Keppel Corporation, Lee Boon Yang (third from left); CEO of Keppel Corporation, Loh Chin Hua (second from left); CEO of National Parks Board, Kenneth Er (far left), and students from Nanyang Girls' High School.



## Communities

### Social Investment Spending by Project Type, 2017 (%)



● Education	47.0
● Industry Advancement	10.7
● Arts, Sports and Community Development Projects	9.3
● Care for the Underprivileged and Healthcare	7.6
● Environment	25.4
<b>Total</b>	<b>\$4.5 million 100.0</b>

To promote dialogue on corporate social responsibility and social innovation, Keppel supported the Global Compact Network Singapore Summit in 2017. Themed 'Better Businesses Together for the Future Economy', the conference explored the latest trends in sustainable business practices.

### Sustaining Growth Conserving Biodiversity

The Keppel Discovery Wetlands at the Singapore Botanic Gardens was officially opened in March 2017 by Prime Minister of Singapore Lee Hsien Loong. Established with a \$2.08 million commitment from Keppel, the Wetlands includes a plant collection of over 200 species, and for the first time, visitors can enjoy a freshwater forest wetland in the heart of the city. Since its launch, over 600,000 people have visited the Wetlands. Keppel Volunteers serve as ambassadors for the Wetlands by leading tours for students and seniors to promote conservation.

Other environmental initiatives include Keppel Volunteers' participation in BioBlitz, a national biodiversity survey at various locations including the Keppel Discovery Wetlands, and in beach clean-up events in Singapore and overseas.

### Raising Eco-Consciousness

Keppel demonstrated its support for climate action by participating in Earth Hour 2017. Non-essential lights at various shipyards, plants and buildings were turned off for an hour, and activities were organised to raise awareness on climate change.

Keppel Land was a strategic partner of Ricoh's Eco-Action Day for the fourth consecutive year, while Keppel REIT came on board as the official Building Sponsor. Eco-Action Day roadshows were held at Keppel Land and Keppel REIT office lobbies, and Keppel employees shared environmentally-friendly tips for the home and workplace with tenants and visitors.

To raise environmental awareness among the younger generation, volunteers from Keppel Land organised a museum tour and naturalist workshop for underprivileged children at the Lee Kong Chian National History Museum.

As part of Keppel Land China's environmental outreach initiatives, Keppel Volunteers organise regular school tours to the Chenshan Botanical Gardens in Shanghai, China, to provide students with exposure to native biodiversity.



We invest in programmes aligned with our Sustainability Framework, which guides Keppel's commitment to Sustaining Growth, Empowering Lives and Nurturing Communities.





1. Children learnt more about biodiversity in a naturalist workshop organised by our volunteers.

2. Keppel Land extended the WoW programme in Vietnam, which promotes literacy among young children.

### 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.

Keppel Land continued its support of the International Green Building Conference (IGBC) in 2017, which brings together real estate developers, urban planners, architects and engineers to promote thought leadership on green building solutions. Volunteers planted 50 trees in the Kranji Marshes as a lead-up event to Singapore Green Building Week at the IGBC 2017.

### 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. Through on-the-job training and career placements, the programme aims to enhance the skills and employability of students in the offshore and marine engineering as well as logistics sectors.

In 2017, Keppel Data Centres partnered Singapore Institute of Technology (SIT)

to offer the 'Integrated Work Study' programme, which entails a one-year job attachment for students.

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. Training is conducted at the Keppel Batangas Training Centre. Upon completion of the apprenticeship programme, youth are offered employment opportunities with the shipyard or its subcontractors. In 2017, 65 scholarships were awarded.

#### Promoting Education

Inclusive, quality education can lift communities out of poverty by helping children create brighter futures for themselves and their families. By improving access to education, we empower children who are marginalised.

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. With Keppel's contribution, over 200 deserving students from low-income families have been awarded scholarships, academic awards, bursaries and study grants. 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 (SUTD) scholarship, Keppel Award of Excellence and Keppel Bursary Award offered by SUTD; and the Keppel Study Grants and Keppel Gold Medals offered by SIT.

Keppel also seeks to make a positive difference in the overseas markets where we operate.

BrasFELS employees lead the 'Teach-It-Forward' programme in Brazil, extending supplementary classes and educational visits to public school children and youth in Angra dos Reis. High school students are also invited to the BrasFELS shipyard, where volunteers share their academic and professional journeys to inspire the students. Over 230 students benefitted from this programme in 2017.

Separately, Keppel AmFELS has contributed over US\$600,000 to local charities and scholarship funds for local state universities in Texas, the United States, since 2004.

In Vietnam, Keppel Land promotes child literacy through its sponsorship of 'Words on Wheels (WoW)', a mobile library programme in partnership with Singapore International Foundation, the General Sciences Library of Ho Chi Minh City and Hanoi Public Library. To date, more than 7,000 students have benefitted from the mobile library as well as English lessons and Information Technology workshops.



## Communities



1. Our shipyards in the Philippines organise regular blood donation campaigns.

2. In Brazil, volunteers share their academic and professional journeys to inspire students as part of BrasFELS' 'Teach-It-Forward' programme.

Keppel Land has recently extended its support again for Phase Two of WoW (Ho Chi Minh) for another three years, from 2018 to 2020. The new programme is expected to positively impact over 7,000 Vietnamese students and will include English lessons on green living and financial literacy, with the aim of inculcating positive values among the local community, and in particular the youths.

### 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.

Keppel supported the International Committee for Museums and Collections of Modern Art Annual Conference 2017 hosted by National Gallery Singapore. Over 280 contemporary art professionals from 50 countries attended the conference, which was held in Southeast Asia for the first time and explored the role of museums in civil society.

Singapore's National Arts Council awarded Keppel Corporation its 10th consecutive Distinguished Patron of the Arts Award in 2017, in recognition of the Company's contribution to Singapore's art scene.

### Keppel Centre for Art Education

The Keppel Centre for Art Education at National Gallery Singapore is the first art education facility of its kind in the region. Established with a \$12 million commitment from Keppel, the Centre has benefitted over 850,000 visitors since its launch in 2015. Guided school tours and workshops introduce visual literacy, analytical and interpretive skills to students. In 2017, several key spaces at the Centre were refreshed with new exhibits incorporating elements that cultivate a sense of curiosity and exploration among children (see page 86).

### Keppel Nights

In March 2018, Keppel announced its commitment of \$500,000 over three years to Keppel Nights, renewing its partnership with Esplanade – Theatres on the Bay to nurture a deeper appreciation of the arts among students in Singapore (see page 87).

Since 2013, the partnership has provided about 20,000 students from more than 70 schools in the heartlands with access to arts and cultural shows presented by Esplanade.

Keppel Nights also includes an element of experiential learning, with dance, music and drama workshops that give students the 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 to support a wide range of social service organisations that reach out to the disadvantaged in society. Keppel business units including Keppel FELS, Keppel Shipyard, Keppel Singmarine and Keppel Logistics have been strong partners of Community Chest's SHARE, a monthly giving programme. The Keppel Group has contributed over \$2.8 million through SHARE since 1988.

Keppel continued to work with key partners in Singapore and overseas to organise regular activities for beneficiaries. Beneficiaries in Singapore include children from Care Corner and the Muscular Dystrophy Association Singapore, senior citizens from Thye Hua Kwan Senior Activity Centres, as well as underprivileged households supported by North West Community Development Council.

In China, Keppel Land works with non-governmental organisations like Bless China International and local hospitals to provide medical support for underprivileged villagers in Yunnan. Since 2006, over 100 villagers with cataract have had their eyesight restored under this programme. Volunteers also regularly visit remote villages to donate essential supplies.

We strongly support the advancement of the arts and believe that an appreciation of the arts should be cultivated from a young age.

To mark World Health Day, BrasFELS organised free health checks and lectures for over 100 members of the community in Angra dos Reis.

Keppel's shipyards in the Philippines also organise regular blood donation campaigns. In 2017, Keppel Batangas Shipyard and Keppel Subic Shipyard received a Scroll of Honour and a Certificate of Appreciation from the Philippine Red Cross' National Office respectively, in recognition of the companies' support and promotion of blood donation.

### Running for a Cause

Keppel employees frequently rally to participate in charity sports events in aid of worthy causes.

Keppel contributed \$30,000 to the Singapore Exchange Bull Charge Run 2017, which raised money for five charities in Singapore, namely AWWA, Autism Association (Singapore), Community Chest, Fei Yue Community Services and Shared Services for Charities. Over 100 employees from across the Group joined the run.

Keppel Land was title sponsor of the Singapore leg of the National Geographic

Earth Day Run, with about 2,200 runners, including Keppel Land tenants and staff joining the good cause. The event marked Singapore's first mass run powered solely by renewable energy and driven by zero-waste initiatives.

Keppel also supported the Heartstrings Vertical Marathon, which raised funds for Community Chest beneficiaries, and Singapore Cancer Society's Race Against Cancer, which saw teams from Keppel putting their fitness to the test to raise money to fund cancer treatment subsidies, cancer rehabilitation, hospice care, cancer screenings and public education.

### Spurring Excellence

Keppel sponsored the Keppel-Singapore Table Tennis Association Awards and the Keppel-Clementi Zone Training Centre in 2017. Since 2013, Keppel has provided cash awards to recognise national table tennis players with standout performances and exemplary character traits. The Keppel-Clementi Zone Training Centre, which Keppel has supported since 2011, aims to groom future table tennis talents by providing funds for coaching and equipment, and to maintain affordable training fees.



## Communities

### 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 close to \$30 million in aid of causes that resonate with the company's beliefs and values.

The Foundation focuses on initiatives that protect the environment, promote education, arts and culture, or care for the underprivileged. In 2017, the Foundation disbursed \$3.76 million in support of causes aligned with these focus areas.

Such initiatives include the Keppel Discovery Wetlands, a restored freshwater forest wetland at Singapore Botanic Gardens which houses a plant collection of over 200 species, the Keppel Centre for Art Education at National Gallery Singapore, which aims to foster creativity and a sense of curiosity and exploration in children through art, as well as endowment scholarships, bursaries and awards disbursed through various institutes of higher learning.

The Foundation also supports initiatives to uplift communities, including North West Community Development Council's educational programmes that aim to increase the social mobility of students from low-income families, as well as Monfort Care's programme to improve the nutrition and physical well-being of elderly beneficiaries.

### Creating Meaningful Impact

Where possible, the Foundation's contributions are complemented by employee volunteerism.

For example, Keppel Volunteers act as ambassadors for the Keppel Discovery Wetlands by leading tours for students and seniors to promote conservation.

The Foundation also makes financial contributions to the National Kidney Foundation (NKF) to provide underprivileged patients with subsidies for their dialysis treatments. To further the impact of our contribution, our volunteers packed and delivered bundles of food and other daily necessities to needy patients at the various NKF dialysis centres.

In addition, children with disabilities from the Muscular Dystrophy Association Singapore (MDAS) benefit from regular and meaningful activities organised by Keppel Volunteers, which are funded by the Foundation.

This approach to corporate giving is not only impactful, but also engages our employees, and helps amplify desirable outcomes for our beneficiaries.



## Special Focus

## Keppel Volunteers

### Making a Difference

Our community outreach initiatives are spearheaded by Keppel Volunteers, our Group-wide volunteer movement.

Keppel Volunteers was started in 2000 as a ground-up movement by a group of 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 2017, Keppel Volunteers achieved about 12,000 hours of community service, a significant increase of 4,000 hours over the 8,000 hours in 2016. Our outreach efforts brought cheer to more than 1,000 beneficiaries.

To encourage volunteerism, employees are given two days of paid volunteer leave annually. Regular volunteers are also recognised for their efforts at the annual Keppel Volunteers appreciation event.

#### Keppel Community Month

The Company has designated August as Keppel Community Month to rally volunteers and spur collaboration among business units in driving outreach activities.

In 2017, volunteers in Singapore prepared, cooked and distributed food to low-income households, conducted workshops to impart life skills to underprivileged

children, and accompanied elderly in a tour of the country's maritime landmarks.

Keppel Volunteers' overseas chapters in Brazil, China, the Philippines and Vietnam also organised diverse and meaningful activities, touching the lives of communities abroad.

In China, volunteers organised an excursion to the beach for disabled children. In Brazil, our shipyards nurtured the career aspirations of youth through its 'Teach-It-Forward' programme. In the Philippines, volunteers imparted values to young children through folklore in a series of story-telling sessions at the Keppel-GK Eco Village. Meanwhile, employees in Vietnam participated in a charity run supported by Keppel Land Vietnam to raise funds for underprivileged college students.

Commenting on Keppel Community Month 2017, Chief Executive Officer of Keppel Corporation, Loh Chin Hua, said, "Keppelites stepped forward to make a difference during Keppel Community Month, serving in diverse outreach activities in Singapore and overseas with over 1,300 volunteer hours. Through our collective strength, lives were touched and communities were empowered."

1. Keppel Care Foundation's support of MDAS is complemented by outreach activities organised by Keppel Volunteers.

2. Keppel Volunteers organised story-telling sessions for children at the Keppel-GK Eco Village in the Philippines as part of Keppel Community Month.



2



## Communities

### Special Focus

# Fostering Creativity in Children

Through supporting the arts, we aim to foster creativity and expression, which in turn contribute to the vibrancy of our communities.

The Keppel Centre for Art Education at National Gallery Singapore is the first art education facility of its kind in the region. Established with a \$12 million commitment from Keppel, the Centre has benefitted over 850,000 visitors since its launch in 2015. Guided school tours and workshops introduce visual literacy, analytical and interpretive skills to students. The Centre was recently refreshed with new exhibits incorporating elements that cultivate a sense of curiosity and exploration among children.

On 7 June 2017, National Gallery Singapore CEO Chong Siak Ching hosted Chairman of Keppel Corporation Lee Boon Yang, together with members of Keppel's board of directors and senior management, to a tour of the refreshed spaces. Also present at the event were about 40 children from New Life Community Services, who were guided by Keppel Volunteers through the various exhibits.

### Refreshed Exhibits Project Gallery

'The Blue Who Swims All This Way' by artist Betty Susiarjo cultivates children's curiosity through imaginative play. Children develop tactile and aural sensibilities in an 'Underwater World' as they explore soft sculptures and respond to sounds of the ocean under an iridescent wave.

### Children's Museum

In the virtual ceramic studio, children can learn about how ceramics are created as well as design their own virtual ceramic pots at interactive stations and observe the firing process in a hologram.

### Children's Museum Workshop

Children enjoy a hands-on experience at the workshop, where they are introduced to different print-making tools, materials and processes and have the opportunity to create their own artworks inspired by the Gallery's National Collection.

### Art Playscape

Inspired by urban cities and games that children play around the neighbourhood, artist Tang Ling Nah's 'Wandering in Black and White', is an immersive installation filled with dramatic perspectives and shadows. Children learn about form, space and light as they engage with shadow play and create their own colourful city skylines and stories.

### Art Corridor

Children can explore a colourful spectrum of shapes, patterns and forms inspired by sculptor Han Sai Por's 'Tetrahedron-tetrahedron Interpenetration' at the Art Corridor.



1. Lee Boon Yang (middle, in green), Chairman of Keppel Corporation, and members of Keppel's board of directors and senior management were hosted to a tour of the refreshed spaces, and interacted with children from New Life Community Services.

2. As part of the Keppel Nights programme, senior management of Keppel Corporation and the Esplanade hosted students from Jurongville Secondary School to the gala performance of the National Theatre's production of 'The Curious Incident of the Dog in the Night-Time' at the Esplanade Theatre.

## Special Focus

# Nurturing an Appreciation for the Arts

Through the extension of our Keppel Nights programme, we continue to nurture an appreciation of the arts among students.



Keppel Corporation has committed \$500,000 over three years, from 2018-2020, to Keppel Nights, renewing its partnership with Esplanade - Theatres on the Bay to nurture a deeper appreciation of the arts among students in Singapore. Since 2013, the partnership has provided about 20,000 students from more than 70 schools in the heartlands with access to arts and cultural shows presented by Esplanade.

Starting in 2018, Keppel Nights will expand its scope to include Esplanade's sensory-friendly performances designed for audiences with special needs, including those on the autism spectrum. Aural and visual elements are adjusted for such performances, and a calming space at the theatre foyer will also be made available for children to acclimatise themselves before entering the theatre, or to take time out during performances.

To mark this renewed partnership, about 50 students from Jurongville Secondary School were treated to the Gala Performance of the National Theatre's production of 'The Curious Incident of the Dog in the Night-Time' at the Esplanade Theatre. Another 15 students from Teck Whye Secondary School, together with their families and caregivers, attended the sensory-friendly performance of the show.

Yvonne Tham, CEO-designate, The Esplanade Co Ltd, said, "As Esplanade turned 15 in October 2017, we re-affirmed our commitment to serve our diverse communities and to do even more to be inclusive. With Keppel Corporation's continued support, more students of different needs will be able to come to their national performing arts centre for meaningful arts experiences that we hope will inspire them and pique their curiosity about the arts and the world."

Edwin Chan, Principal of Teck Whye Secondary School, said, "We appreciate that the Keppel Nights programme has provided our students with good aesthetic learning experiences. Parents and their children are also given wonderful opportunities to bond when they enjoy such performances together."

Ho Tong Yen, General Manager, Group Corporate Communications, Keppel Corporation, said, "Keppel Nights aims to foster appreciation of the arts among students by exposing them to world-class performances and diverse art and cultural forms. 2018 marks Keppel Corporation's 50th anniversary and we are pleased to extend this very well-received and impactful initiative for the benefit of more students, including those with special needs."

## 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 page 9). 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 2017, available at [www.keppcorp.com/annualreport2017](http://www.keppcorp.com/annualreport2017), for more information on the Group's businesses, strategy, performance and prospects.

### Reporting Period & Standards

GRI 102-50 / 102-51

This report is published annually and covers the same period as the financial year of the Company (January to December 2017). Our last sustainability report was published in May 2017. 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-ST Listing Rules 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 89.

We used standard units of measurement. Conversion factors may be found in the relevant sections. All dollar values expressed are Singapore dollars.

### Report Boundary

GRI 102-46 / 102-48 / 102-49

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 2017. The reporting boundaries for Environmental Management, 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 253 significant subsidiaries and associated companies as at 31 December 2017. Information pertaining to them is published on pages 171 to 179 of Keppel Corporation's Report to Shareholders 2017.

There are no restatements of information in this report.

### Independent Assurance

GRI 102-56

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

GRI 102-53

This report demonstrates our commitment to keep our stakeholders abreast of Keppel's sustainability performance. We welcome feedback.

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# Global Reporting Initiative (GRI) Content Index

GRI 102-55



## This report has been prepared in accordance with the GRI Standards: Core option

GRI 102-54

GRI Standard	Disclosure Number	Disclosure Title	Page Reference and Remarks*	Connections to UN Initiatives
<b>General Disclosures</b>				
GRI 101: Foundation 2016				
<b>Organisational Profile</b>				
GRI 102: General Disclosures 2016	102-1	Name of the organisation	Cover	UNGC Principles 1-10; SDG 3,6,7,8, 9,11,12,13,16,17
	102-2	Activities, brands, products, and services	4-5	
	102-3	Location of headquarters	Back Cover	
	102-4	Location of operations	4-5	
	102-5	Ownership and legal form	6, AR 2017 (171-179, 196)	
	102-6	Markets served	4-5	
	102-7	Scale of the organisation	4-6, 24-27	
	102-8	Information on employees and other workers	70-74	
	102-9	Supply chain	22-23	
	102-10	Significant changes to the organisation and its supply chain	22-23, 26-27	
	102-11	Precautionary Principle or approach	33-39, AR 2017 (87-88)	
	102-12	External initiatives	12-18	
	102-13	Membership of associations	20, 65-66	
<b>Strategy</b>				
	102-14	Statement from senior decision-maker	2-3	
	102-15	Key impacts, risks, and opportunities	12-15, 35-37, AR 2017 (14-19)	
<b>Ethics &amp; Integrity</b>				
	102-16	Values, principles, standards, and norms of behaviour	Inside Front Cover, 8, 16-17, 39	UNGC Principles 1-10; SDG 16
	102-17	Mechanisms for advice and concerns about ethics	33-34, 39, AR 2017 (74-77)	
<b>Governance</b>				
	102-18	Governance structure	7-9, 29-34	UNGC Principle 10; SDG 16
	102-19	Delegating authority	7-9	
	102-20	Executive-level responsibility for economic, environmental, and social topics	7-9	
	102-21	Consulting stakeholders on economic, environmental, and social topics	20-21	
	102-22	Composition of the highest governance body and its committees	7-9, 29-32	
	102-23	Chair of the highest governance body	29-30	
	102-24	Nominating and selecting the highest governance body	30-32	
	102-25	Conflicts of interest	30-31	

\* References to Keppel Corporation's Report to Shareholders 2017 are expressed as 'AR 2017 (page number)'. Keppel Corporation's Report to Shareholders 2017 is available at [www.keppcorp.com/annualreport2017](http://www.keppcorp.com/annualreport2017)



## Global Reporting Initiative (GRI) Content Index

GRI Standard	Disclosure Number	Disclosure Title	Page Reference and Remarks*	Connections to UN Initiatives	
<b>General Disclosures</b>					
GRI 102: General Disclosures 2016	102-26	Role of highest governance body in setting purpose, values, and strategy	7-9, 29-30		
	102-27	Collective knowledge of highest governance body	30-31, AR 2017 (84)		
	102-28	Evaluating the highest governance body's performance	30-32, AR 2017 (81-82, 84)		
	102-29	Identifying and managing economic, environmental and social impacts	7-9		
	102-30	Effectiveness of risk management processes	7-9, 39, AR 2017 (79)		
	102-31	Review of economic, environmental, and social topics	7-9, AR 2017 (66)		
	102-32	Highest governance body's role in sustainability reporting	7-9		
	102-33	Communicating critical concerns	29-31, AR 2017 (87)		
	102-35	Remuneration policies	32-33, AR 2017 (69-73)		
	102-36	Process for determining remuneration	32-33, AR 2017 (69-73)		
	<b>Stakeholder Engagement</b>				
	102-40	List of stakeholder groups	21	UNGC Principle 3; SDG 8, 17	
	102-41	Collective bargaining agreements	69-70		
102-42	Identifying and selecting stakeholders	20			
102-43	Approach to stakeholder engagement	21, 56-57			
102-44	Key topics and concerns raised	21			
<b>Reporting Practice</b>					
102-45	Entities included in the consolidated financial statements	6, AR 2017 (171-179)			
102-46	Defining report content and topic Boundaries	9, 88			
102-47	List of material topics	9			
102-48	Restatements of information	88			
102-49	Changes in reporting	88			
102-50	Reporting period	88			
102-51	Date of most recent report	88			
102-52	Reporting cycle	88			
102-53	Contact point for questions regarding the report	88			
102-54	Claims of reporting in accordance with the GRI Standards	89			
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102-56	External assurance	93-95			

\* References to Keppel Corporation's Report to Shareholders 2017 are expressed as 'AR 2017 (page number)'. Keppel Corporation's Report to Shareholders 2017 is available at [www.keppelcorp.com/annualreport2017](http://www.keppelcorp.com/annualreport2017)

GRI Standard	Disclosure Number	Disclosure Title	Page Reference and Remarks*	Connections to UN Initiatives
<b>Topic-Specific Disclosures</b>				
<b>Economic Sustainability</b>				
GRI 103: Management Approach 2016	103-1/103-2/103-3	Management Approach	25-27, AR 2017 (14-19)	SDG 8, 9, 11, 17
GRI 201: Economic Performance 2016	201-1	Direct economic value generated and distributed	27	
	201-4	Financial assistance received from government	27	
GRI 202: Market Presence 2016	202-2	Proportion of senior management hired from the local community	72	
<b>Corporate Governance</b>				
GRI 103: Management Approach 2016	103-1/103-2/103-3	Management Approach	29-33	UNGC Principle 10; SDG 16, 17
GRI 205: Anti-Corruption 2016	205-1	Operations assessed for risks related to corruption	37	
	205-2	Communication and training about anti-corruption policies and procedures	33-34, 39	
GRI 419: Socioeconomic Compliance 2016	419-1	Non-compliance with laws and regulations in the social and economic area	27,33-34	
<b>Environmental Performance</b>				
GRI 103: Management Approach 2016	103-1/103-2/103-3	Management Approach	41-42	UNGC Principles 7-9; SDG 3, 6, 7, 12, 13
GRI 302: Energy 2016	302-1	Energy consumption within the organisation	43	
	302-4	Reduction of energy consumption	43-44	
GRI 303: Water 2016	303-1	Water withdrawal by source	44-46	
	303-3	Water recycled and reused	44-46	
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	46-48	
	305-2	Energy indirect (Scope 2) GHG emissions	46-48	
	305-5	Reduction of GHG emissions	46-48	
	305-7	Nitrogen oxides (NO <sub>x</sub> ), sulphur oxides (SO <sub>x</sub> ), and other significant air emissions	46-48	
GRI 306: Effluents & Water 2016	306-2	Waste by type and disposal method	46	
	306-3	Significant spills	48	
GRI 307: Environmental Compliance 2016	307-1	Non-compliance with environmental laws and regulations	48	
<b>Product Excellence</b>				
GRI 103: Management Approach 2016	103-1/103-2/103-3	Management Approach	51, 56	SDG 9, 11, 17
GRI 416: Customer Health & Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories	56	
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	57	

## Global Reporting Initiative (GRI) Content Index

GRI Standard	Disclosure Number	Disclosure Title	Page Reference and Remarks*	Connections to UN Initiatives
<b>Topic-Specific Disclosures</b>				
<b>Labour Practices &amp; Human Rights</b>				
GRI 103: Management Approach 2016	103-1/103-2/103-3	Management Approach	69-72	UNGC Principles 1-6; SDG 3, 4, 8, 17
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	72-73	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	69-72	
	401-3	Parental leave	69-72	
GRI 404: Training & Education 2016	404-1	Average hours of training per year per employee	72-73	
	404-2	Programmes for upgrading employee skills and transition assistance programmes	69, 72-75	
	404-3	Percentage of employees receiving regular performance and career development reviews	69-71	
GRI 405: Diversity & Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	30-31, 70-74	
GRI 406: Non-Discrimination 2016	406-1	Incidents of discrimination and corrective actions taken	69-72	
<b>Safety &amp; Health</b>				
GRI 103: Management Approach 2016	103-1/103-2/103-3	Management Approach	61-62	SDG 3, 8, 17
GRI 403: Occupational Health & Safety 2016	403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	62-63	
<b>Supply Chain &amp; Responsible Procurement</b>				
GRI 103: Management Approach 2016	103-1/103-2/103-3	Management Approach	22-23	UNGC Principles 1-10; SDG 8, 12, 16
GRI 308: Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria	22	
GRI 414: Supplier Social Assessment 2016	414-1	New suppliers that were screened using social criteria	22	
<b>Community Development</b>				
GRI 103: Management Approach 2016	103-1/103-2/103-3	Management Approach	78-87	SDG 3, 4, 15, 17
GRI 203: Indirect Economic Impacts 2016	203-2	Significant indirect economic impacts	78-87	
GRI 413: Local Communities 2016	413-1	Operations with local community engagement, impact assessments, and development programmes	78-87	

\* References to Keppel Corporation's Report to Shareholders 2017 are expressed as 'AR 2017 (page number)'. Keppel Corporation's Report to Shareholders 2017 is available at [www.keppcorp.com/annualreport2017](http://www.keppcorp.com/annualreport2017)

# Independent Assurance Statement

GRI 102-56

## Introduction

DNV GL, represented by DNV GL Business Assurance Singapore Pte. Ltd., has been commissioned by the management of Keppel Corporation Ltd. (Keppel) to carry out an independent assurance engagement, Type 2, Moderate level, for the non-financial, qualitative and quantitative information (sustainability performance) reported in the Keppel Corporation Sustainability Report 2017 (the Report), which is available to stakeholders from Keppel's website and in print, for the financial year ending 31 December 2017. This assurance engagement was planned and carried out using DNV GL's assurance methodology VeriSustain™ (Version 5.0)<sup>1</sup> which is based on our professional experience, international assurance best practice including the International Standard on Assurance Engagement 3000 (ISAE3000) Revised<sup>2</sup> and the Global Reporting Initiative (GRI) Standards.

## Scope of Assurance

The scope of assurance included a review of sustainability disclosures and performance data from Keppel and its subsidiaries which have operations in and outside of Singapore. The boundary of the report for identified material topics and topic-specific disclosures are defined in the respective chapters and unless otherwise stated, will include those subsidiaries that Keppel has management control. We evaluated the Report for adherence to the reporting principles for defining the sustainability report content as set forth in the GRI Standards. We understand that the reported financial data and information are based on Keppel's and respective subsidiaries' financial statements, which are subject to a separate independent audit process. The review of financial data taken from the Financial statements is not within the scope of our work.

## Responsibilities

Keppel has sole responsibility for the integrity of the report and the responsibility includes designing, implementing, and maintaining internal controls over data collection, analysis and aggregation as well as preparation and fair presentation of the Report, and data that is free from material misstatement. In performing our assurance work, our responsibility is solely towards the management of Keppel in accordance with the terms of reference agreed on with Keppel. However, our statement represents our independent opinion and is intended to inform the independent conclusion of our verification to Keppel's stakeholders. DNV GL is responsible for planning and performing

the engagement to obtain limited assurance about whether the selected information is free from material misstatement and meets the disclosure requirements.

## Basis of Opinion

We conducted the assurance engagement in line with the requirements of the AA1000 Assurance Standard, Type 2, Moderate level of assurance and DNV GL's assurance methodology VeriSustain™. A multi-disciplinary team of sustainability and assurance specialists performed the work at Keppel's corporate headquarters and its subsidiary Keppel Telecommunications & Transportation (Keppel T&T) in Singapore in March 2018 to verify the qualitative and quantitative disclosures, including testing the reliability of data and the robustness of the data aggregation process, such as the related management approach for identified material topics. As part of the verification, we planned and performed our work based on DNV GL's risk-based approach to obtain the evidence that we considered necessary to provide a basis for our assurance opinion. Within the framework of our assessment, we performed the following procedures and other activities including:

- Conducted interview with data owners from Keppel Corporation and its subsidiaries including Keppel Offshore & Marine, Keppel Land and Keppel T&T, to understand the key processes and controls for reporting subsidiary performance data;
- Assessed the robustness of the underlying data and information flow and controls;
- Performed data analysis using a risk-based approach and materiality;
- Challenged the sustainability-related disclosures, statements and claims;
- Performed limited testing on a sampling basis of the selected information at Keppel's corporate headquarters and subsidiaries' headquarters to check that the selected environmental and social data had been properly measured, gathered, recorded, collated and reported.

We also performed the following activities to assess the adherence to reporting principles:

- Interviewed senior managers and representatives responsible for sustainability management and made enquiries to determine their understanding of stakeholder engagement and materiality;
- Reviewed the current sustainability issues that could affect Keppel and could be of interest to stakeholders.

<sup>1</sup> The VeriSustain™ protocol is available upon request at [www.dnvgl.com/assurance/reporting/verification.html](http://www.dnvgl.com/assurance/reporting/verification.html)

<sup>2</sup> Assurance Engagements Other Than Audits or Reviews of Historical Financial Information.



## Independent Assurance Statement

### Conclusion

Based on the work undertaken, we provide a limited/moderate level of assurance over non-financial disclosures presented in Keppel's Report, and based on the scope of this assurance engagement and in doing so, nothing has come to our attention to suggest that the Report does not give a fair representation of Keppel's related sustainability performance. Without affecting our assurance opinion, we also provide the following observations regarding the adherence to the reporting principles for defining the sustainability report content and for defining report quality as defined in the GRI Standards.

### Stakeholder 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 Report could include concerns of other stakeholder groups that Keppel engages with, both locally and overseas.

### Materiality

Keppel established a materiality matrix involving external stakeholders at the end of 2014 and has revisited its material topics through an annual internal exercise. In 2017, 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. Keppel could consider engaging external stakeholders in subsequent materiality assessments and expanding the boundary to include coverage on more material topics associated with overseas entities.

### Responsiveness

The Report provides an 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.

### Completeness

The Report has adequately covered the sustainability strategy, management approach and sustainability performances against the material topics identified. The boundary of the Report covers the sustainability performances from the global operations, subsidiaries and associated companies over which the Keppel Group has management control. The presentation within the Report enables stakeholders to analyse changes in the sustainability performance over time.

### Accuracy & Reliability

Keppel has selected, compiled and reported information in a relatively consistent manner. 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 enhanced by internal verification checks to improve consistency in data collection.

### Report Quality: Balance & Neutrality

The document allows the reader to examine both the positive and the negative trends of Keppel's performance in 2017, 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 a fair description of Keppel's sustainability impact.

### Findings in Relation to Specific Sustainability Performance Information

The Report covers global operations and key 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 by a dedicated function in the Group and consolidated for reporting. 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 Report presents Keppel's non-financial performance in the wide context of sustainability and explains how various initiatives from Keppel and its subsidiaries are aligned with achieving the United Nations Sustainable Development Goals.

### Limitation

Our assurance relies on the premise that the data and information provided by Keppel to us as part of our review procedures have been provided in good faith and free from misstatements. Because of the selected nature (sampling) and other inherent limitations of both procedures and systems of internal control, there remains the unavoidable risk that errors or irregularities, possibly significant, may not have been detected. The engagement excludes the sustainability management, performance and reporting practices of Keppel's associated companies, suppliers, contractors and any third-parties mentioned in the Report. The company's position statements, statements for the management approach, and case studies and examples are excluded from the scope of our work. We did not interview external stakeholders as part of this assurance engagement. The reported disclosures related to Economic performance are based on financial disclosures and data, which were cross-checked with internal documents and the audited consolidated financial statements. Limited depth of evidence gathering including inquiry and analytical procedures and limited sampling at lower levels in the organisation were applied as per the agreed scope of engagement. The data for Environmental and Social performance are verified with random samples of data, and the aggregated data at the corporate level is used for the verification. The procedures performed in a limited/moderate level of assurance engagement vary in nature and timing, and are less in extent than for a reasonable/high level of assurance engagement. We expressly disclaim any liability or co-responsibility for any decision a person or an entity may make based on this Assurance Statement.

### Statement of Competence & Independence

DNV GL applies its own management standards and compliance policies for quality control, in accordance with ISO/IEC 17021:2011 - Conformity Assessment Requirements for bodies providing audit and certification of management systems, and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory

requirements. We have complied with the DNV GL Code of Conduct<sup>3</sup> during the assurance engagement, and maintain independence where required by relevant ethical requirements. This engagement work was carried out by an independent team of sustainability assurance professionals. 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 assurance process. DNV GL did not provide any services to Keppel during 2017 that could compromise the independence or impartiality of our work.

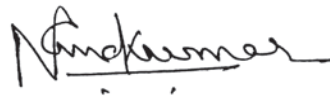
For and on behalf of DNV GL Business Assurance Singapore Pte. Ltd.



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#### Nandkumar Vadakepath

##### Assurance Reviewer

Head, Regional Sustainability Operations  
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27 April 2018



AA1000  
Licensed Assurance Provider  
000-10



<sup>3</sup> The DNV GL Code of Conduct is available from DNV GL's website ([www.dnvgl.com](http://www.dnvgl.com))

## Key Personnel

### Group Sustainability Steering Committee

**Loh Chin Hua**

Chairperson  
Chief Executive Officer,  
Keppel Corporation

**Chan Hon Chew**

Chief Financial Officer,  
Keppel Corporation

**Ong Tiong Guan**

Chief Executive Officer,  
Keppel Infrastructure

**Chris Ong**

Chief Executive Officer,  
Keppel Offshore & Marine

**Christina Tan**

Chief Executive Officer,  
Keppel Capital

**Thomas Pang**

Chief Executive Officer,  
Keppel Telecommunications & Transportation

**Louis Lim**

Chief Operating Officer,  
Keppel Land and  
Managing Director,  
Keppel Technology & Innovation

### Group Sustainability Working Committee

**Ho Tong Yen**

Chairperson  
General Manager,  
Group Corporate Communications,  
Keppel Corporation

**Robert Chong**

Director,  
Group Human Resources,  
Keppel Corporation

**Paul Tan**

Group Controller,  
Keppel Corporation

**Cindy Lim**

Director,  
Group Corporate Development,  
Keppel Corporation and  
Managing Director,  
Keppel Urban Solutions

**Sebastien Lamy**

Director,  
Group Strategy & Development,  
Keppel Corporation

**Caroline Chang**

General Manager,  
Group Legal,  
Keppel Corporation

**Sepalika Kulasekera**

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Group Internal Audit,  
Keppel Corporation

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Keppel Corporation

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Keppel Corporation

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Keppel FELS

**Serena Toh**

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