



**PETRONAS**

# LEADING. FUTURE FOCUSED

**PETRONAS  
CHEMICALS  
GROUP  
BERHAD**

(459830-K)

**SUSTAINABILITY REPORT  
2018**





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# Inside This Report



Cover Rationale

## LEADING. FUTURE FOCUSED

As the leading integrated chemicals producer in Malaysia and one of the largest in Southeast Asia, our vision is to be The Preferred Chemical Company Providing Innovative Customer Solutions, making a difference to the lives of millions of people around the world. With our **Leading** performance in 2018, we have delivered on our promises. We remain firmly **Future Focused** and are creating value for all our stakeholders through a fundamentally resilient and sustainable business, able to capitalise on opportunities and withstand the challenges presented by a dynamically shifting global business landscape.

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## The following icons are used throughout this Sustainability Report



Tells you where you can find more information online at [www.petronaschemicals.com](http://www.petronaschemicals.com)



Gives you information on photographs used throughout the report

The following navigation icons are used to link our strategy and resources to material matters, strategic risks, key performance indicators and performance:

### Main Capitals



Natural



Financial



Manufactured



Intellectual



Human



Social and Relationship

### Material Matters



Health and Safety



Environment



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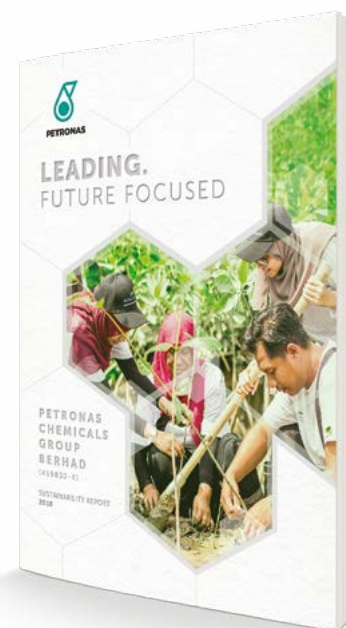


## About This Report

# Sustainability Reporting Approach

We are proud to present PETRONAS Chemicals Group Berhad's (PCG) inaugural standalone Sustainability Report 2018 (SR). This report provides a clear account of our sustainability agenda in meeting the expectations of our stakeholders. It provides details of actions taken to balance our economic imperatives with social and environmental obligations, and elaborates on the value creation activities we conduct within our six capitals as explained in our Integrated Report (IR).

In producing our standalone SR, we seek to grow strong relationships based on trust and respect with our various stakeholders as we recognise that their support is critical to our long-term success. Our commitment is reflected in a robust governance framework which ensures we uphold a high level of integrity and transparency in all our dealings and interactions with our base of stakeholders. The aim of our report is to create clarity in communicating our actions and activities to our stakeholders on matters that count, and in expanding it into an SR, to provide more in-depth and expansive coverage of our Economic, Environmental and Social (EES) initiatives and their impacts.



### Application of Materiality

The SR applies the concept of materiality, to promote conciseness and focus of the report. It considers areas of impact to the business and of interest to our stakeholders, encouraging a balanced disclosure that responds to current needs. Our material matters are as follows:

1

#### Health and Safety

Safety is our first priority. We benchmark our performance against industry and global standards to cultivate the safety culture amongst our employees and to manage our asset integrity. As we grow as a business, we will not falter in emphasising health and safety as a workplace focus.

2

#### Business Operations

We focus on sustaining best in class performance of our business operations in delivering our vision to be The Preferred Chemical Company Providing Innovative Customer Solutions. In doing so, we capitalise on our efficient asset management, reliable feedstock supply and our highly skilled talents. Reinforced by our customer-centric value proposition of looking through our customers' lens, we are responsive in meeting customers' diverse needs.

3

#### Growth

Committed to delivering superior value, we leverage on our market leadership to continue sustainable business growth through portfolio expansion, strategic investments and collaboratively co-creating innovative product application and solutions. By forming enduring stakeholder relationships, we capture greater business opportunities, giving us an edge in the industry.

4

#### Environment

This year, we deploy our Sustainability Strategic Thrust within three Sustainability Focus Areas (SFA) – Business Sustenance, Resource Efficiency and Social Responsibility. We have always emphasised environmental management in our business with continuous improvement in resource efficiency and environmental footprint. Against heightened regulatory and societal scrutiny in recent years, action plans within our SFAs will support our response and pursuit towards sustainable business growth.

5

#### Social and Governance

As the largest integrated gas-based chemicals producer in Southeast Asia, we believe in maintaining the highest standards of responsible business practices. This is evident from the strong relationships of trust we share with our shareholders, customers, employees and communities. As a signatory of Responsible Care®, we conduct annual Product Stewardship programmes regionally and internationally. We believe in conducting our business ethically, by adhering to all applicable laws in areas we operate and contributing to the nation.



Further details on the materiality assessment process please refer to pages 74 – 75 under the Strategy section of our IR



## Reference and Guidelines

In producing this SR, we are guided by Bursa Malaysia's Sustainability Framework, IPIECA's 'Oil and Gas Industry Guidance on Voluntary Sustainability Reporting', Global Reporting Initiative (GRI) as well as Environmental, Social and Governance (ESG) assessment indicators from FTSE4Good Bursa Malaysia Index.

## Supporting the Global Initiative

The United Nations has identified 17 Sustainable Development Goals (SDGs) as part of its Agenda for Sustainable Development to be achieved in 2030. The SDGs aim to achieve sustainable future for the planet, people and prosperity by addressing amongst others, global challenges related to poverty, inequality, climate, environmental degradation, prosperity, peace and justice. Our value creation of the six capitals are aligned with the SDGs.

## Sustainable Development Goals (SDGs)

The 17 SDGs which PCG contributes to are as follows:



**Goal No. 1 :**  
No Poverty



**Goal No. 7 :**  
Affordable and Clean Energy



**Goal No. 13 :**  
Climate Action



**Goal No. 2 :**  
Zero Hunger



**Goal No. 8 :**  
Decent Work and Economic Growth



**Goal No. 14 :**  
Life Below Water



**Goal No. 3 :**  
Good Health and Well-being



**Goal No. 9 :**  
Industry, Innovation and Infrastructure



**Goal No. 15 :**  
Life on Land



**Goal No. 4 :**  
Quality Education



**Goal No. 10 :**  
Reduced Inequalities



**Goal No. 16 :**  
Peace, Justice and Strong Institutions



**Goal No. 5 :**  
Gender Equality



**Goal No. 11 :**  
Sustainable Cities and Communities



**Goal No. 17 :**  
Partnerships for the Goals



**Goal No.6 :**  
Clean Water and Sanitation



**Goal No. 12 :**  
Responsible Consumption and Production



Further details on how these SDGs link to our sustainability objectives and material matters can be found on pages 21 – 24 under our Sustainability Strategy section

Contents of the report are based on a materiality assessment, which determine those issues that are most important to us and our stakeholders. Where possible, we have provided quantitative data to support our narrative. Where such data cannot be presented, we have implemented systems and processes that have enabled us to measure and monitor our sustainability performance. Our sustainability disclosure has gone through external peer review and independent internal verification to ensure the effectiveness of our internal controls and standard operating procedures.

## The Boundaries of Our Reporting

Data for this report has been compiled from all the manufacturing subsidiaries in which PCG has more than 50% ownership. As we have operational control over these companies, they have adopted our approach in managing sustainable development focus areas. The boundary of our reporting is limited to PCG and the principal activities of our subsidiaries for locations in Malaysia, unless otherwise stated.

## Reporting Period

The report provides an overview of the key EES risks and initiatives that were identified and implemented, within the period of 1 January 2018 to 31 December 2018.

## At A Glance

# 2018 Performance Overview

### Waste Management

- Increase volume of 3R (Reduce, Reuse, Recycle) by 10% compared to 2017

### Wastewater Discharges

- COD Intensity – 0.02 tonnes effluent per kilotonne of production in 2018, compared to 0.03 in 2017

### Emissions to Air

- Air Emission Intensity – 2.59 tonnes of air emission per kilotonne of production in 2018, compared to 2.62 in 2017

### Responsibility to the Environment

- ▶ Energy Intensity rate of **16.36 GJ** per tonne of production in **2018**, compared to 16.69 in 2017

- ▶ Freshwater Withdrawal Intensity of **4.68 M<sup>3</sup>** per tonne of production in **2018**, compared to 4.38 in 2017

- ▶ GHG Intensity of **0.85 TONNE CO<sub>2</sub>** equivalent per tonne of production in **2018**, compared to 0.87 in 2017







### Caring for Society

## Corporate Social Responsibility

In 2018, PCG touched the lives of more than 13,000 community members through our Corporate Social Responsibility (CSR) programmes, which focus on three pillars of PETRONAS CSR Framework: Education, Community Well-being & Development and Environment at our areas of operation.

### Be Green

### ecoCare

### Back-to-School

### Safety Awareness Programme

## Commitment to Health and Safety



- ▶ **0.13** LTIF in **2018** compared to 0.09 in 2017
- ▶ **0.43** TRCF in **2018** compared to 0.54 in 2017
- ▶ **1** Process Safety Incident in **2018**, compared to 0 in 2017

- ▶ **4** Global Product Safety Summaries (GPSS) submissions in **2018**
- ▶ A total of **6** Product Stewardship Engagements in **2018**



## At A Glance

# Who We Are

**LARGEST METHANOL PRODUCER**  
IN ASIA PACIFIC &  
**4<sup>TH</sup> LARGEST IN THE WORLD\***



**2<sup>ND</sup> LARGEST UREA,  
AMMONIA & BuAC PRODUCER**  
IN SOUTHEAST ASIA\*



**3<sup>RD</sup> LARGEST MEG,  
LDPE & ETHOXYLATES PRODUCER**  
IN SOUTHEAST ASIA\*



**LARGEST MTBE, BUTANOL,  
BGE & EOA PRODUCER**  
IN SOUTHEAST ASIA\*



Workers conducting a plant walkabout at PC Glycols in Kertih, Terengganu, the 3<sup>rd</sup> largest MEG production unit in Southeast Asia



## LARGEST INTEGRATED GAS-BASED CHEMICALS PRODUCER IN SOUTHEAST ASIA\*

**Methanol:**  
**2.4 MILLION TONNES**  
per annum

**Urea:**  
**2.6 MILLION TONNES**  
per annum

**Ammonia:**  
**2.0 MILLION TONNES**  
per annum

**Butyl Acetate (BuAC)**  
**50 KILOTONNES**  
per annum

**Monoethylene Glycol (MEG):**  
**380 KILOTONNES**  
per annum

**Low Density Polyethylene (LDPE):**  
**255 KILOTONNES**  
per annum

**Ethoxylates:**  
**60 KILOTONNES**  
per annum

**Methyl Tert-Butyl Ether (MTBE):**  
**300 KILOTONNES**  
per annum

**Butanol:**  
**140 KILOTONNES**  
per annum

**Butyl Glycol Ether (BGE):**  
**60 KILOTONNES**  
per annum

**Ethanolamines (EOA):**  
**75 KILOTONNES**  
per annum

\* By capacity

## What We Do

PCG is established as part of the PETRONAS Group, a Fortune 500 company, to maximise value from Malaysia's natural gas resources. PCG aspires to be The Preferred Chemical Company Providing Innovative Customer Solutions.

To chart our business direction, PCG has a two-pronged strategy of sustaining the strength of our basic petrochemicals portfolio and selectively diversifying into derivatives, specialty chemicals and solutions. PCG has over three decades of experience in the chemicals industry and is the largest integrated gas-based chemicals producer in Southeast Asia.

Our business is primarily in the manufacturing, marketing and selling of a diversified range of chemical products, including olefins, glycols, polymers, fertilisers, methanol and other derivative products. Today, the Group has a total combined production capacity of 12.8 million tonnes per annum (million tpa) with operations spanning across seven world class production sites in Malaysia, two of which are fully vertically integrated from feedstock to derivatives and specialty chemicals. Our products are exported across 29 countries, where 68% is sold to our key markets in Southeast Asia. We have marketing and sales subsidiaries and representative offices in Malaysia, Thailand, China, Indonesia, India, Vietnam, and the Philippines.

PCG was listed on Bursa Malaysia on 26 November 2010. Being one of the top 10 companies in the FTSE4Good Bursa Malaysia (FTSE4Good) Index, out of 200 largest companies ranked by market capitalisation, PCG is committed to ensure our business practices are in line with globally recognised standards for sustainable practices.



For more information, please log on to our website:  
[www.petronaschemicals.com](http://www.petronaschemicals.com)

## At A Glance

## 2018 Key Highlights

## Business Highlights



Sustained World Class Safety Performance (LTIF)\*

**0.13**

2017: 0.09



Higher Plant Utilisation

**92%**

2017: 91%



Pengerang Integrated Complex (PIC) Petrochemical Projects Progressing Well

**96%**



Reduced Greenhouse Gases (GHG) Emission Intensity

**0.85 tonne CO<sub>2</sub>e\*\***  
per tonne of production

2017: 0.87 tonne CO<sub>2</sub>e  
per tonne of production



Higher Production Volumes

**10.4 million tpa**

2017: 10.1 million tpa



Higher Sales Volumes

**8.4 million tpa**

2017: 8.1 million tpa



CSR Reached More Than

**13,000 people**

\* Lost Time Injury Frequency based on Oil and Gas Industry benchmark of 0.27  
\*\* Carbon dioxide (CO<sub>2</sub>) equivalent

## Signature Corporate Social Responsibility (CSR) Programmes

## ecoCare

A collaborative programme with the Malaysian Nature Society (MNS) which supports reforestation and rehabilitation of the mangrove habitat.

## Be Green

An environmental conservation and plastics usage awareness programme conducted in collaboration with the Malaysian Plastic Manufacturers Association (MPMA), in line with the New Plastics Economy.

## Back-To-School

A learning support programme which also provides school necessities assistance to underprivileged students in our areas of operation.



PCG stellar performance was attributed to our highly-skilled talents



PCG Be Green programme promotes environment conservation including plastic usage awareness among students

## Financial Highlights

Higher Revenue

**RM19.6 billion**

2017: RM17.4 billion

Higher Profit After Tax

**RM5.1 billion**

2017: RM4.4 billion

Higher EBITDA

**RM7.0 billion**

2017: RM6.6 billion

EBITDA Margin

**35.6%**

2017: 38.0%

Higher Total Dividend

**RM2.6 billion**

2017: RM2.2 billion

Higher Total Assets

**RM37.4 billion**

2017: RM33.3 billion



## Vision and Shared Values

We are defined by our ability to create value across the EES spheres. Led by our Vision, we listen to market needs along a multi-national spectrum, and derive strategic responses. We anchor on our Shared Values to deliver results and respond to risks and opportunities.



### Our Vision

The Preferred Chemical Company Providing Innovative Customer Solutions



### Our Strategy

Two-Pronged Strategy

#### FIRST-PRONG

Sustain strength in basic petrochemicals

#### SECOND-PRONG

Selectively diversify into derivatives, specialty chemicals and solutions

#### Strategic Thrust

##### OPERATIONAL EXCELLENCE

Achieve sustainable world class plant performance

##### COMMERCIAL EXCELLENCE

Increase value by looking through customers' lens

##### GROWTH DELIVERY EXCELLENCE

Diversify petrochemicals into higher value-adding products



### Our Shared Values

Our values are embedded in our culture as the backbone of our business conduct, reflecting our sense of duty and responsibility in upholding our commitment towards contributing to the well-being of the people and nations wherever we operate.

#### LOYALTY

Loyal to corporation

#### PROFESSIONALISM

Strive for excellence

#### INTEGRITY

Honest and upright

#### COHESIVENESS

United, trust and respect for each other

## Statement by MD/CEO

### Dear Valued Stakeholders,

It is our pleasure and honour to present to you PETRONAS Chemicals Group Berhad's (PCG) inaugural standalone Sustainability Report (SR) for the year 2018. This report represents a milestone for us in sharing our sustainability agenda, as we continue to drive business growth in line with our vision of being The Preferred Chemical Company Providing Innovative Customer Solutions.



**Datuk Sazali Hamzah**  
Managing Director/Chief Executive Officer

Our standalone SR allows us to comprehensively share with you our sustainability agenda, results and challenges in ensuring sustainable development within the context of our business sustenance. It provides an easy one-point reference for all our stakeholders, to demonstrate how we aligned our sustainability practices in managing our business and pursuing growth within the six capitals to achieve sustainable development agenda.

As a responsible business entity, sustainability has always been part of our DNA in creating value for our stakeholders. We believe in balancing our business goals against sustainability development imperatives, such as the reduction of our environmental footprint to minimise the impact of our chemical operations on communities and the environment, as well as contributing to the well-being of the local communities within the areas of our plants' operation.

We are committed to present to you our sustainability actions and impacts in a transparent and accountable manner, showing our compliance with local and international sustainability indices and standards.



As a constituent of the FTSE4Good Bursa Malaysia Index, we adhere to its Environmental, Social and Governance (ESG) criteria, which in turn draws strongly from global disclosure frameworks such as the Global Reporting Initiative (GRI) and Carbon Disclosure Project (CDP). We are also in compliance with Bursa Malaysia's Sustainability Framework and as a player in the oil and gas industry, we refer to IPIECA's Oil and Gas Industry Guidance of Voluntary Sustainability Reporting. The cumulative results of our efforts can be seen in our commitment to reduce our carbon footprint through good governance on efficient use of energy, where we take into account environmental considerations in our decision making process.

We believe that our focused approach, which is practiced within a strong sustainability governance structure and framework, adds to our long-term business sustenance. It further strengthens the relationships of trust we have formed with our stakeholder base, including our shareholders, and gives us a competitive advantage in a marketplace which is placing greater emphasis on resource efficiency. Our relationships of mutual trust with our stakeholders, especially our communities, reinforces our social licence to operate, while our proven track record in Health, Safety and Environment (HSE) standard ensures a safe work culture and further strengthens our rapport with the Government and regulatory authorities. We also value our strong relationships with our customers, who play a large role in our value creation journey.

### Enhancing Our Sustainability Agenda

The year 2018 saw us enhancing our efforts to improve our sustainability disclosures, whereby we conducted a series of workshops to analyse our gaps based on Bursa Malaysia's review of the sustainability disclosures of public listed companies. Based on the outcome of the gap assessment, we have drawn up action plans to address these gaps.

#### Sustainable Development Working Committee (SDWC)

Our **SDWC** participated in a workshop during the year to understand the importance and relevance of the **SDGs** to our business

Our materiality assessment for sustainability disclosures was conducted in reference to IPIECA as well as taking into account our Integrated Reporting journey. Bearing in mind the nature of our business as a petrochemical company, our sustainability focus areas have been developed and defined in alignment with IPIECA.

As a responsible corporate citizen, PCG is committed to support the realisation of the United Nations Sustainable Development Goals (SDGs) which is working towards a better world for all by 2030. Thus, in 2018 we embarked on our journey to align our sustainability agenda with the SDGs. As a start, we have leveraged on IPIECA's links to the 17 SDGs and how the oil and gas industry can contribute to address each of the 17 SDGs. IPIECA's links are based on a partnership it conducted with the United Nations Development Programme (UNDP) and International Finance Corporation (IFC) in 2017 to further understand the objectives of the SDGs. Within our own business, our SDWC participated in a workshop during the year to understand the importance and relevance of the SDGs to our business. Additionally, as a signatory of the chemical industry's Responsible Care® Programme, we have maintained our Product Stewardship efforts regionally and internationally as a firm commitment of our sustained efforts in this area.

As a result of all these enhancements during the year, we have developed a more refined sustainability strategy identifying our Sustainability Focus Areas (SFA). The SDWC were then assigned with relevant SFA to develop targets and action plans.

## OUTLOOK

As we continue with our ongoing business journey, our aspiration is to be one of the recognised value creating companies in sustainability performance, adding to our competitive market presence in the Asia Pacific region. As we push forward with our business objective of engendering growth, we will maintain our single minded focus on enhancing our Sustainability Focus Areas of Business Sustenance, Resource Efficiency and Social Responsibility, to maintain our course in conducting our business in a responsible and sustainable manner.

We will continue to safeguard our assets and ensure reliable operations by adhering to the highest levels of HSE safety culture and processes. As a signatory of the Responsible Care® initiative, we will continue to focus on improving the environmental, health and safety of our facilities, processes and products. As we continue with value creation activities within our operational footprint, we remain

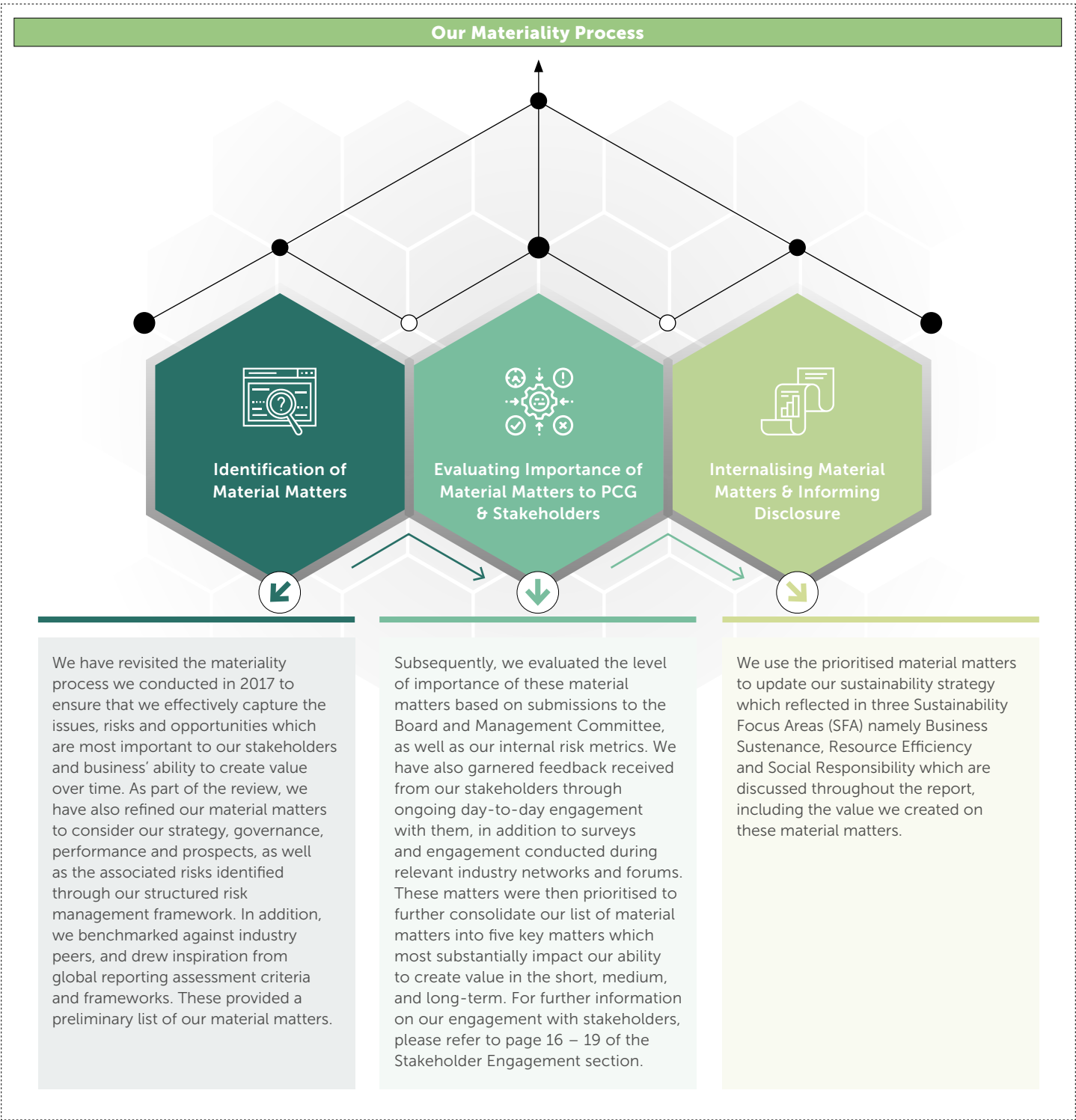
cognisant of our environmental stewardship obligations to do so in a responsible manner. Additionally, we will be continuing with investments in biotechnology innovations towards green chemical solutions. Our social license to operate is derived from our Corporate Social Responsibility programmes, which mainly focus on educating and empowering communities within our areas of operations, and we remain focused on prioritising their well-being.

In the medium to long-term, this will further drive our brand recognition as a responsible business entity, further cementing the relationships of strength we have with our stakeholders and enhancing our competitive edge amongst other industry players. By continuing with our best-in-class approach, and sustaining our operations in an economically, environmentally and socially responsible manner, we believe our sustainability practices will add to our long-term value.

# Our Approach to Sustainability

The year 2018 is a milestone year for us, marking the production of our first Integrated Report and a standalone Sustainability Report to enhance our transparency.

As we advance with our Integrated Reporting journey, we aim to communicate how we create value by demonstrating our continuous efforts and disclosing the outputs and outcomes in a manner that is meaningful to our stakeholders. Therefore, we have identified five material matters that reflect the challenges and opportunities of our business model. These material matters have guided the content disclosure of this report. Below, we narrate the steps taken in determining the material matters.





## How Sustainability is Governed

At PCG, we believe a sustainability governance structure founded on the principles of good governance and transparency is vital to ensure that sustainable development is integrated throughout our value chain.

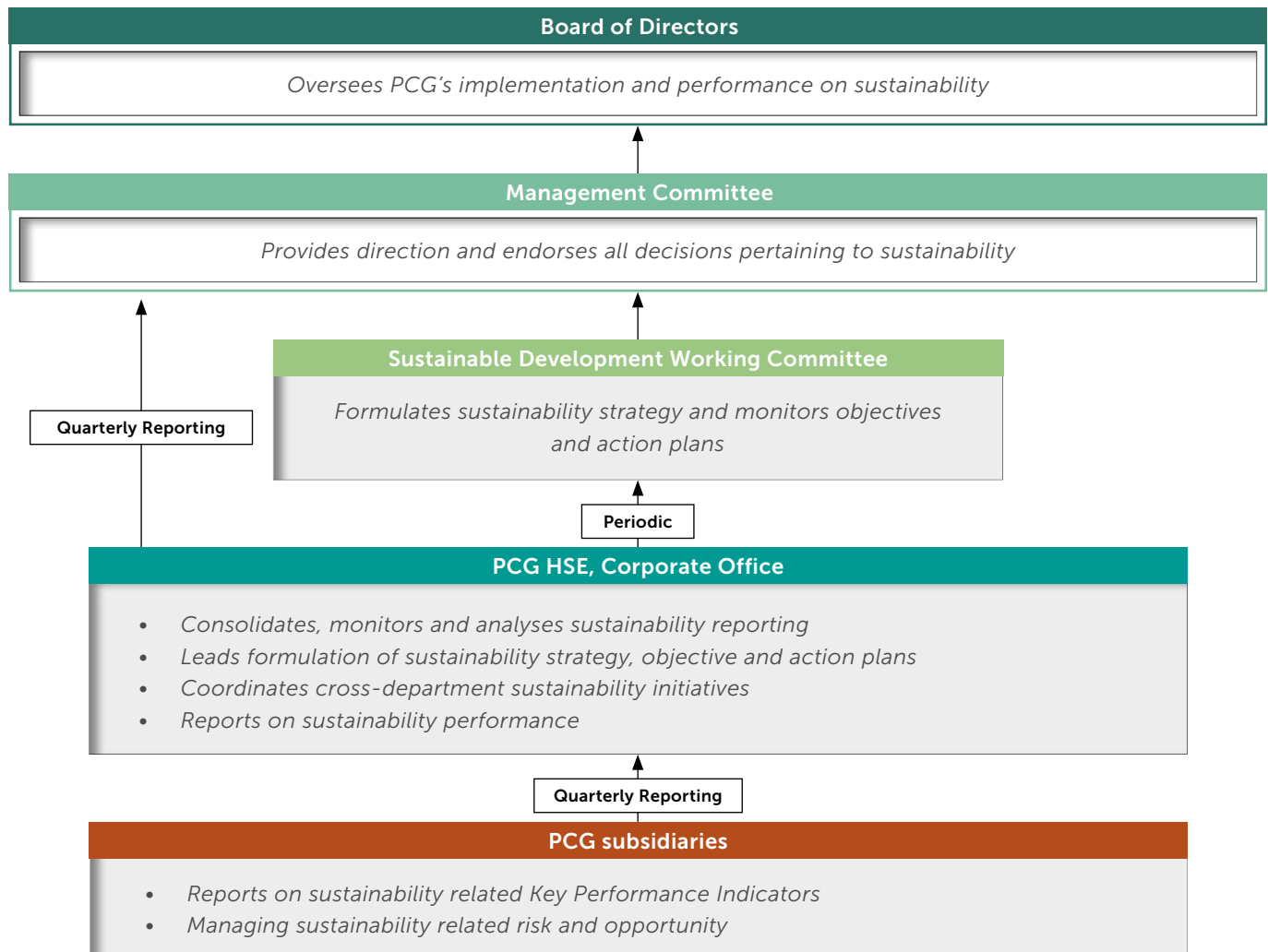
The Management Committee (MC) is the highest decision making authority with regards to all our sustainability initiatives. It is led by MD/CEO, Datuk Sazali Hamzah.

The MC provides direction to the Sustainable Development Working Committee (SDWC), which formulates the sustainability strategy and monitors objectives and action plans drawn up under the strategy. The SDWC is a cross-departmental body, whose members comprise heads of all departments. SDWC members work closely with their counterparts in each subsidiary to ensure stakeholder value creation across the Group.

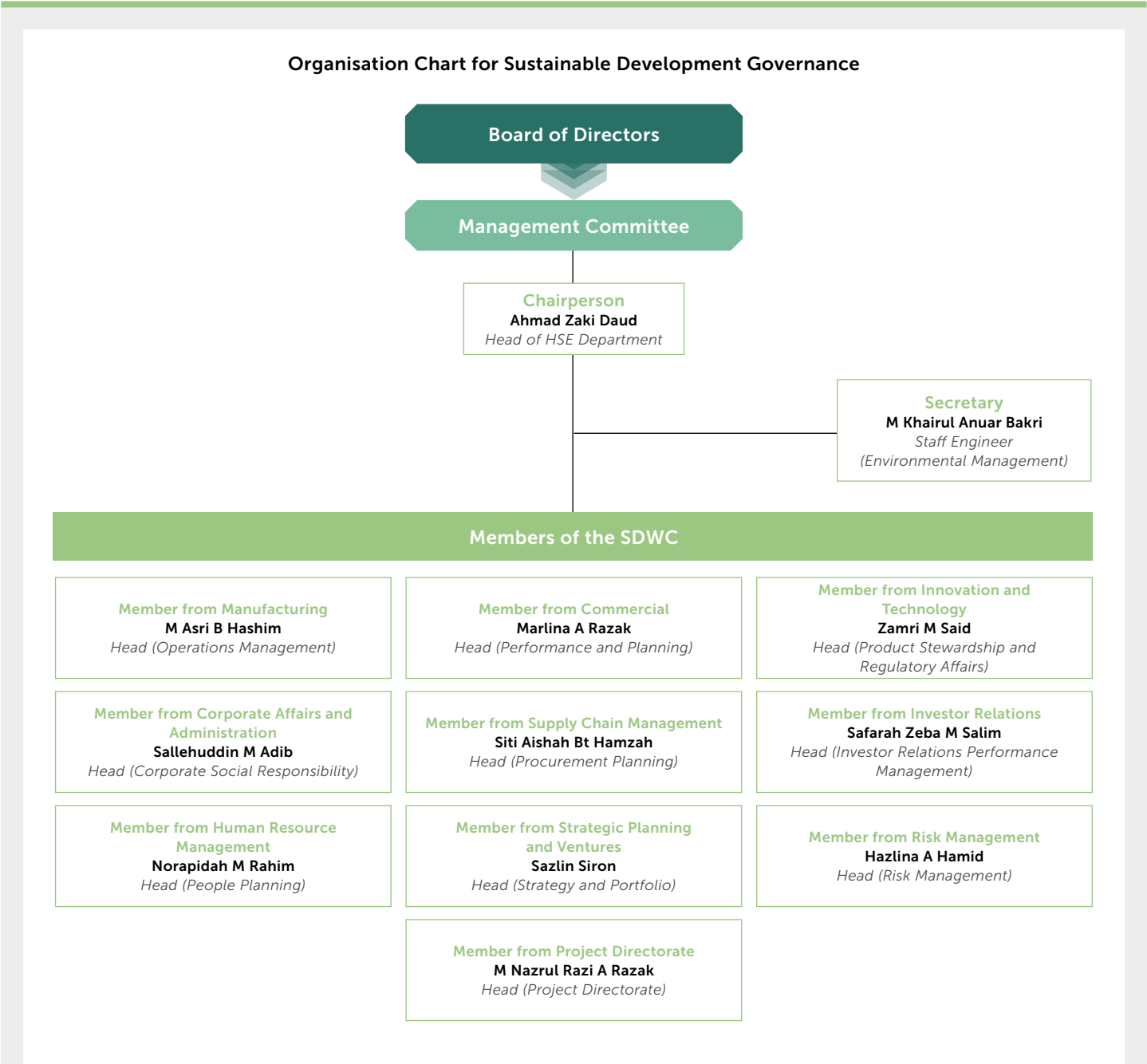


Mangrove replanting and seedling activities help to preserve the rich biodiversity of mangrove swamp habitats in Kertih, Terengganu

### PCG's Sustainable Development Governance Structure and Process



# How Sustainability is Governed



## Our Sustainable Development Working Committee (SDWC)

The SDWC conducts quarterly reviews on information related to sustainability that will be reported to the MC. This includes matters such as how sustainability elements are managed by PCG and quantitative data and performance indicators relate to each sustainability element. It also formulates sustainability strategy and monitors the status of actions taken to support each sustainability element, and compares quarterly performance indicators against targets.

To ensure that PCG's sustainability programme is on track, the SDWC coordinates cross-departmental sustainable development enhancements and initiatives. The SDWC also conducts an annual materiality assessment to determine PCG's sustainable development Focus Areas vis-à-vis Bursa Malaysia's Material Sustainability Matters (MSM). Additionally, it conducts an annual review list of information related to each MSM that will be publicly reported, including procedures and initiatives that are required to support each MSM.



## Stakeholder Management Framework

We engage regularly with key stakeholders via different platforms to build positive and meaningful relationships based on openness and trust. Through these formal and informal sessions, we are able to obtain relevant input on our stakeholders' concerns, and incorporate them into our sustainability strategies and actions to effectively address their concerns. We value our communication with stakeholders as it helps us to better understand our operating environment, leading to better informed decisions and directions.

In order to have a clear understanding of our stakeholders' needs and interests, we have implemented our Stakeholder Management Process as guided by PETRONAS Group Strategic Communication. We have also identified our groups of stakeholders into four tiers according to their individual influence and organisational relevance. We use this to effectively manage stakeholders' perceptions of our performance, behavior and communication to achieve our desired end-state of ensuring our social license to operate and maintaining strong brand positioning for sustainable business growth. Additionally, our stakeholder engagement is also linked to the material matters we have identified as crucial for our continuous sustainable development.



Stakeholder Engagement

Our Stakeholders

Employees

**Main Stakeholder Interest**

- Occupational safety and health
- Capability development
- Employee welfare
- Environmental management

**Actions to Address Stakeholder Interests**

- Enhance management systems that ensure a safe working environment
- Provide structured training programmes for employee development
- Provide regular feedback to employees on their performance
- Enhance Human Resource (HR) policies that promote work life balance

**Link to Material Matters and Focus Area**

**Material Matters:**

- Business Operations
- Health & Safety
- Social and Governance

**Focus Area:**

- Nurturing the capabilities of our people
- Improving and maintaining safety and health in our operations
- Providing a supportive work environment for all employees

**Reference Page**

- Pages 26 – 57
- Pages 72 – 73 & 94 – 101 of our Integrated Report which is available online at [www.petronaschemicals.com](http://www.petronaschemicals.com)

Government & Regulators

**Main Stakeholder Interest**

- Ethical business practices
- Regulatory compliance
- Occupational safety and health
- Environmental management

**Actions to Address Stakeholder Interests**

- Regular engagement with authorities to update on compliance progress and feedback
- Conducting internal and external assurance
- Continuous engagement to identify new opportunities for local economic/investment development
- Key stakeholders are identified and assigned respective key accountable persons from PETRONAS
- Proactive engagement planning is done to ensure structured coordination across the company
- Planned engagements are conducted to ensure key messages are delivered, salient points captured and issues flagged

**Link to Material Matters and Focus Area**

**Material Matters:**

- Social and Governance

**Focus Area:**

- Increasing transparency and ethical practices in governance

**Reference Page**

- Pages 26 – 57
- Pages 72 – 73 of our Integrated Report which is available online at [www.petronaschemicals.com](http://www.petronaschemicals.com)
- A Commitment to Governance standalone report



## Customers

## Main Stakeholder Interest

- Product quality
- Timely product delivery
- Competitive product pricing and attractive credit terms
- After-sales technical support
- Consumer data protection
- Collaborative solutions and technologies
- Confidence and trust in PCG's brand

## Actions to Address Stakeholder Interests

- Maintain strict quality control/quality assurance processes at our manufacturing facilities
- Monitor timely delivery by benchmarking actual delivery against agreed delivery for all orders
- Offer distinct value propositions based on customer segment, such as extending full access to technical support, attractive credit terms or priority delivery to customers
- Address customer feedback in a timely manner and ensure mutual agreement before closure
- Management of all areas of the business, including ethical governance and compliance practices

## Link to Material Matters and Focus Area

## Material Matters:

- Business Operations
- Health & Safety
- Social and Governance

## Focus Area:

- Improving customer experience through collaborative solutions
- Delivering superior product and service quality
- Guaranteeing the health and safety of our products

## Reference Page

- Pages 62, 72 & 97 – 101 of our Integrated Report which is available online at [www.petronaschemicals.com](http://www.petronaschemicals.com)

## Shareholders and Investment Community

## Main Stakeholder Interest

- Responsible and ethical business practices
- Shareholders' returns
- Growth strategies
- Business sustainability
- Regulatory compliance

## Actions to Address Stakeholder Interests

- Implementation of investor relations communication strategy through various capital market forums and road shows
- Development of clear, consistent and transparent two-way communications focused on:
  - Understanding and addressing external stakeholders' interest
  - Ensuring understanding of PCG's operational, commercial and long-term growth strategy
- Timely and consistent sharing of relevant information and financial results

## Link to Material Matters and Focus Area

## Material Matters:

- Social and Governance
- Environment

## Focus Area:

- Increasing transparency and ethical practices in governance

## Reference Page

- Pages 73 & 97 – 101 of our Integrated Report which is available online at [www.petronaschemicals.com](http://www.petronaschemicals.com)

# Stakeholder Engagement

Media

Main Stakeholder Interest

- Ethical business practices
- Regulatory compliance
- Safety and health
- Data protection
- Environmental management
- New innovation and technology
- Business growth
- Media investment and support

Actions to Address Stakeholder Interests

- Enhanced media engagement strategies, media relations tools and guidelines
- Share company information on financial, business and growth agenda via appropriate channels
- Ensure coherent messaging across PCG

Link to Material Matters and Focus Area

Material Matters:

- Social and Governance

Focus Area:

- Increasing transparency and ethical practices in governance

Reference Page

- Pages 72 & 97 – 101 of our Integrated Report which is available online at [www.petronaschemicals.com](http://www.petronaschemicals.com)

Suppliers and Vendors

Main Stakeholder Interest

- Ethical business practices
- Timely delivery
- Agreements or contracts
- Favourable terms of payment
- Well-being and safety

Actions to Address Stakeholder Interests

- Communication of PETRONAS' Code of Conduct and Business Ethics (CoBE) and PETRONAS Anti-Bribery and Corruption Manual
- Conduct supplier training programmes/vendor mentoring programmes

Link to Material Matters and Focus Area

Material Matters:

- Growth
- Business Operations

Focus Area:

- Delivering superior product and service quality
- Engaging our suppliers to support the efficiency of our operations in securing feedstock and smooth logistics

Reference Page

- Pages 40 & 57
- Pages 62, 72 – 73 & 98 of our Integrated Report which is available online at [www.petronaschemicals.com](http://www.petronaschemicals.com)



**Business Partners****Main Stakeholder Interest**

- Company performance
- Maintaining partnerships
- Agreements or contracts
- Ethical business practices
- Regulatory compliance
- Provide opportunity for growth
- Continuous value creation in existing JVs

**Actions to Address Stakeholder Interests**

- Extension of partnership and networking
- Strengthen company brand and reputation
- Explore new products portfolio

**Link to Material Matters and Focus Area****Material Matters:**

- Growth

**Focus Area:**

- Pursuing growth strategies

**Reference Page**

- Pages 62, 72 – 73 & 90 – 91 of our Integrated Report which is available online at [www.petronaschemicals.com](http://www.petronaschemicals.com)

**Communities****Main Stakeholder Interest**

- Education and social support
- Environmental management
- Safety and health

**Actions to Address Stakeholder Interests**

- Implement initiatives with communities that focus on education and environment
- Inform local communities on the nature of our operations, business and products, and how to respond to emergencies

**Link to Material Matters and Focus Area****Material Matters:**

- Social and governance

**Focus Area:**

- Investing in the well-being of our communities

**Reference Page**

- Pages 26 & 42 – 49
- Pages 73 & 99 of our Integrated Report which is available online at [www.petronaschemicals.com](http://www.petronaschemicals.com)

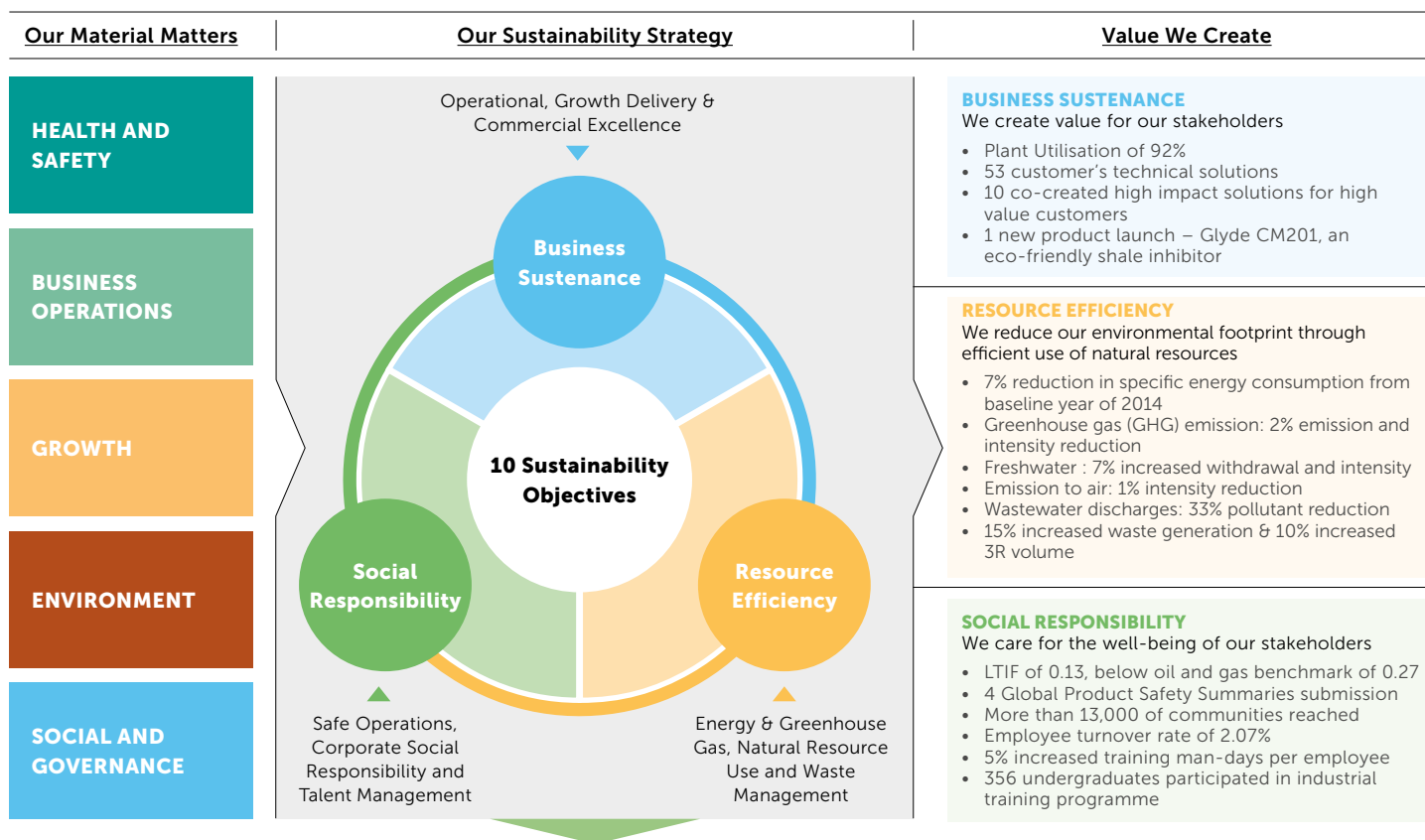
## Our Sustainability Strategy

In 2018, we developed a more refined Sustainability Strategy aligned with Integrated Reporting concept of materiality. Our strategy was developed with reference to IPIECA and Global Reporting Initiative (GRI) to identify our sustainability objectives within three sustainability focus areas namely Business Sustenance, Resource Efficiency and Social Responsibility. The value we create for our Business Sustenance focus area is derived from our Two-Pronged Strategy, the details for which can be found on page 60 in our Integrated Report. The Sustainable Development Working Committee (SDWC) was assigned sustainability objectives relevant to them and they are required to develop targets and action plans. In addition, we have also aligned our sustainability strategy with the SDGs to do our part in furthering the global agenda on sustainable development.

### Identifying Our Sustainability Focus Areas

We determined the areas of operations and activities affecting our business and our stakeholders, where we need to conduct identified sustainability initiatives aligned with our business sustenance objectives, our resource efficiency and our desire to contribute to the well-being of communities.

The outcomes of our refined Sustainability Strategy are as follows:





### Steps of identifying our sustainability strategy



Step 1	Step 2	Step 3	Step 4
The SDWC identified issues relevant to material matters in reference to IPIECA's 'Oil and Gas Industry Guidance on Voluntary Sustainability Reporting' as well as the GRI. IPIECA's approach lists sustainability issues related to climate and energy, environmental and social issues which are most relevant to the petrochemical and oil and gas industry and leverages on its partnership with the United Nations Development Programme to ensure alignment with the UN Sustainable Development Goals. Our Sustainability Objectives align with all the SDGs and are mapped against the most directly contributed by PCG. As for the GRI, we also refer to its economic indicators. We engaged with our stakeholders to obtain their feedback through various engagement channels and identified our material sustainability matters.	We analysed the sustainability issues identified and categorised them into our segmented sustainability focus areas, taking into account how important the issue is to our stakeholders, and its significance to our business and the oil and gas industry.	Following this, we assessed the material sustainability matters identified to determine their significance to PCG using the following criteria: <ul style="list-style-type: none"> <li>Significance of the risk raised by the matter;</li> <li>Degree of importance of the matter to our growth;</li> <li>Our ability to address the matter; and</li> <li>Alignment with our company's values, goals and policies.</li> </ul>	Having identified each of our material sustainability matters in order of relevance and importance, we then identified our sustainability objectives.











Key activities of our 10 Sustainability Strategic Objectives are as follows:



Sustainability Focus Areas	Sustainability Objectives	Key Activities in 2018	Link to SDGs	Link to Our Material Matters
BUSINESS SUSTENANCE	<b>Operational Excellence</b> <ul style="list-style-type: none"> <li>Uphold HSE as a priority</li> <li>Drive our plants' productivity and efficiency whilst executing flawless turnaround</li> </ul>	<ul style="list-style-type: none"> <li>Staunch practice of Felt Leadership, Zero Tolerance (ZeTo) Rules, "Jom Patuh dan Tegur" (Let's Comply and Intervene) and Behavioural Safety programmes</li> <li>Strengthened Equipment Reliability Strategy (ERS) and Bad Actor Management (BAM) programmes to ensure plant reliability</li> <li>Maintained a 10-year Turnaround Master Integrated Schedule across the PETRONAS value chain</li> <li>Leveraged on the online database Systematic Turnaround Execution Planning Solution (STEPS) for our onsite teams to cross-reference turnaround information and best practices</li> </ul>		 <p>Details of our Operational Excellence strategic thrust can be found on page 61 in our Integrated Report which is available online at <a href="http://www.petronaschemicals.com">www.petronaschemicals.com</a></p>
	<b>Growth Delivery Excellence</b> <ul style="list-style-type: none"> <li>Extend value chain from molecules at PIC and existing complexes for higher value creation</li> <li>Build specialty platform through mergers and acquisitions</li> <li>Create optionality for growth via venture capital investments, and internal research and development</li> </ul>	<ul style="list-style-type: none"> <li>Commenced commercial operations at the Integrated Aroma Ingredients Complex and Highly Reactive Polyisobutene (HR-PIB) plant</li> <li>Continued execution of petrochemical plants at Pengerang Integrated Complex (PIC), which are progressing on track at 96% Operational and route-to-market readiness are also on track</li> <li>Finalised JV with Saudi Aramco at Pengerang Petrochemical Company (PPC)</li> <li>Explored several opportunities in derivatives, specialty and biobased chemicals, currently at various stages of evaluation</li> </ul>	 	 <p>Details of our Growth Delivery Excellence strategic thrust can be found on page 62 in our Integrated Report which is available online at <a href="http://www.petronaschemicals.com">www.petronaschemicals.com</a></p>

# Our Sustainability Strategy

Sustainability Focus Areas	Sustainability Objectives	Key Activities in 2018	Link to SDGs	Link to Our Material Matters
<b>BUSINESS SUSTENANCE</b>	<b>Commercial Excellence</b> <ul style="list-style-type: none"> <li>Deliver competitive, customer-centric value proposition with regional presence</li> <li>Develop and co-create innovative products and solutions to strengthen market position</li> <li>Enhance Commercial Excellence capabilities for sustainable business growth</li> </ul>	<ul style="list-style-type: none"> <li>Enhanced Road Transport Operational Guideline (RTOG) via an In-Vehicle Management System (IVMS) which incorporated the latest tracking technology to enhance fleet monitoring compliance</li> <li>Launched 10 new product brands of existing and upcoming products to further strengthen our position as a regional market leader</li> <li>Delivered a total of 64 product applications and solutions to our customers to overcome their pain points and challenges</li> <li>Launched our new state-of-the-art Surfactant Lab for our customers to collaborate and leverage on highly capable technologists</li> <li>Increased our regional marketing and sales presence through the operationalisation of PT PCM Kimia (Indonesia) in April 2018</li> </ul>		 <p>Details of our Commercial Excellence strategic thrust can be found on page 62 in our Integrated Report which is available online at <a href="http://www.petronaschemicals.com">www.petronaschemicals.com</a></p>

Sustainability Focus Areas	Sustainability Objectives	Key Activities in 2018	Link to SDGs	Link to Our Material Matters
<b>RESOURCE EFFICIENCY</b>	<b>Energy and Greenhouse Gases</b> <p><u>Target:</u> Improve Energy Efficiency by 10% by 2020, from a 2014 base year</p>	<ul style="list-style-type: none"> <li>Energy and Loss Management System Community of Practice to review energy management initiatives and roadmap</li> <li>Furnace convection tube cleaning and Charge Gas System piping cleaning at PC Ethylene and PC Polyethylene</li> <li>Reduction of Demineralised Water Import at PC Olefins</li> <li>Utilisation of plant air to wastewater treatment instead of running blowers at PC Olefins, PC Glycols and PC Derivatives utilities</li> <li>Reinstatement of natural gas fuel at Urea plant flare to the original baseline at PC Fertiliser Kedah</li> <li>Dry chemical cleaning of convection bank tubes at ABF</li> </ul>	  	 <p>Refer to pages 26 - 33</p>

Sustainability Focus Areas	Sustainability Objectives	Key Activities in 2018	Link to SDGs	Link to Our Material Matters
RESOURCE EFFICIENCY	<b>Natural Resource Use</b> Optimise hydrocarbon usage through molecule management and implementation of best water management practices	<ul style="list-style-type: none"> <li>Monitor feedstock consumption</li> <li>Enterprise optimisation on ethane chain and promote cost reduction</li> <li>Assess PETRONAS Water Practices Standard implementation at all operating units</li> </ul>	 	 Refer to pages 26 - 33
	<b>Waste Management</b> <u>Target:</u> 100% of manufacturing site to meet their individual hazardous waste management goals by 2024	<ul style="list-style-type: none"> <li>Development and implementation of waste management plan</li> <li>Environmental preparedness initiative for plant undergoing turnaround</li> </ul>		

Sustainability Focus Areas	Sustainability Objectives	Key Activities in 2018	Link to SDGs	Link to Our Material Matters
SOCIAL RESPONSIBILITY	<b>Safe Operations</b> Sustaining world class safety performance	<ul style="list-style-type: none"> <li>Continuously enhancing management presence programme through quality engagement</li> <li>Established taskforce to improve ZeTo Rules compliance</li> <li>Standardisation of Health, Safety and Environment (HSE) communications, e.g. safety videos and collaterals to ensure effective communication at all levels</li> <li>Monitor compliance of Procedure Used Discipline to ensure compliance with Standard Operating Procedures</li> <li>Engineering Management of Change standardisation across PCG</li> <li>Improvement of contracting strategy for dedicated driver and vehicles</li> <li>Improvement in fleet monitoring tools</li> </ul>		 Refer to pages 34 - 41



# Our Sustainability Strategy

Sustainability Focus Areas	Sustainability Objectives	Key Activities in 2018	Link to SDGs	Link to Our Material Matters
SOCIAL RESPONSIBILITY	<b>Product Stewardship</b> Promote the protection of health, safety & environment through our product safety information	<ul style="list-style-type: none"> <li>Completed four submission Global Product Safety Summaries for key chemical product</li> <li>Engaged more than 300 people in several countries, including Indonesia, Vietnam, the Philippines and Malaysia</li> <li>Compliance to all product regulatory and country specific requirement</li> <li>Subscription and active participation to the chemical industry's Responsible Care® (RC) programme.</li> <li>Four manufacturing plants participated in Responsible Care® award assessment and won several awards in the various categories contested</li> </ul>		 <b>Refer to pages 40 - 41</b>
	<b>Corporate Social Responsibility</b> Strengthening our sustainable social commitment towards well-being of the societies where we are present	<ul style="list-style-type: none"> <li>PCG Be Green - reached out to more than 1,300 students in Bintulu, Kertih and Kuantan</li> <li>ecoCare Education Centre (EEC) - more than 4,000 visitors with about 3,000 mangrove seeded and replanted in an area of 11,000 square meter</li> <li>Back-to-School - distribution of school supplies and Science, Technology, Engineering and Mathematics (STEM) development programme to more than 800 underprivileged students in Gurun, Kertih, Labuan and Sipitang</li> <li>Safety awareness taught to more than 270 students, teachers and government officers in Kertih area</li> </ul>		 <b>Refer to pages 42 - 49</b>
	<b>Talent Management</b> Instil passion to inspire people to deliver performance	<ul style="list-style-type: none"> <li>Accelerated Capability Development (ACD) Booster programme - exceed target of 34% time to autonomy</li> <li>Technical Professional Network Program to accelerate talent readiness</li> <li>Implemented two new work life balance: <ul style="list-style-type: none"> <li>Hajj-Umrah Leave Entitlement</li> <li>Leave Work Early for Pregnant Employees</li> </ul> </li> </ul>		 <b>Refer to pages 50 - 57</b>

# Economic Sustainability

The aim of PCG's Economic Sustainability contributions are to create economic value for our stakeholders and provide our shareholders with returns on their investment. The indirect economic impacts of the business operations of our integrated value chain can primarily be traced through contributions for the society's well-being.

The Group's capital expenditure (CAPEX) of RM3.6 billion in 2018 was used to fund growth projects, as well as day-to-day activities that support our plants' stable, reliable and efficient productions. Our primary growth projects for the year were petrochemicals projects at Pengerang Integrated Complex, Johor, which are contributing towards job creation in the state.

As for the ongoing CAPEX requirements of our plants, there are primarily focused on the replacement of equipment under the Equipment Reliability Strategy (ERS) and programmes to enhance our plant operations. In conducting our plants daily operations, we believe in utilising the products and services of local suppliers whenever possible. In this way, PCG is contributing towards the development of local businesses, which in turn aids with the continuous stability of the national economy.

In creating value for our shareholders, we are continuously focused on capturing opportunities to grow our revenue and profit through efficient business operations, and focused investments in asset integrity and reliability to ensure sustainable and reliable business operations which are able to meet the demands and requirements of our customers. By maintaining an innovation led approach towards product innovations and co-creations which focuses on responding to our customers' needs, we have been able to sustain our leading regional reputation, thus ensuring the Group's profitability.

Adding to that are the jobs we provide for our employees and the salaries we pay them, which indirectly contributes to the continuing economic development of the nation. As a responsible corporate citizen, we have always maintained our commitment to pay taxes to the Government. We take our responsibilities in this area seriously as we view our contribution to the Government can positively impact upon the socioeconomic development of the nation.

## Key Highlights



Revenue of

**RM19.6 billion**



Profit After Tax of

**RM5.1 billion**



Total Dividend of

**RM2.6 billion**



Taxes paid of

**RM443 million**



Employee costs of

**RM1.0 billion**



Payments to  
suppliers of

**RM11.6 billion**

for goods and services  
purchased

# Environmental: Responsibility to the Environment



As Malaysia's leading integrated chemicals manufacturer, we remain steadfastly committed to conduct our facilities in a manner which responsibly manages our operations' environmental footprint. Our commitment towards conserving the environment is aligned with our objective of protecting people and planet throughout every aspect of our operations. Our goal is to ensure that the resources we consume are efficiently utilised through various initiatives and optimisations.

In particular, we are mindful of efficiently using the natural resources of water and hydrocarbons, while managing waste in a safe manner, bearing in mind our environment and local communities living within the areas of our operations. Inspired by the Resource Efficiency pillar of our Sustainability Strategic Thrust, we aim to improve the energy efficiency of our energy consumption, which is mainly derived from natural gas, an indication of our strong commitment towards the environment. We also implement best water management practices, and minimise waste.

We require all of our plant facilities throughout the PCG supply chain to report key environmental performance indicators on a quarterly basis, so that our management are well aware of Group performance and where required, can make the necessary interventions. With input provided by the Sustainable Development Working Committee (SDWC), our Management Committee oversees Group performance and makes informed decisions in addressing our environmental performance.

In 2018, PCG underwent the heaviest turnaround since our inception. As part of our efforts to ensure minimal impact on the environment, we conducted environmental turnaround preparedness initiative for our facilities. The initiative was to facilitate the development of a sound environmental management plan focusing on waste minimisation at our affected plants, as well as ensuring smooth execution of turnaround.

We share the knowledge and experience of our personnel in the Environment fraternity through annual Environment Community of Practices (E-CoP) which is organised, PETRONAS Group HSSE, to ensure our people are well equipped with the latest developments and keep abreast of the most up to date environmental best practices.



## Environmental: Responsibility to the Environment



PC Derivatives in Kertih, Terengganu, implements Energy and Loss Management System to promote energy efficiency

### Energy Use and Greenhouse Gas Emissions

Over the past few decades, greenhouse gases (GHG) have been identified as the most significant contributor to climate change. Among these gases, carbon dioxide (CO<sub>2</sub>) has been pinpointed as the most pervasive, being the by-product of various chemical reactions, especially those which involve the burning of fuel and the use of electricity for energy. With more than 75% of our total GHG emissions resulting from the energy we consume to operate our plants, we have made it a priority to manage and minimise our energy consumption through Energy and Loss Management System (ELMS). The ELMS emphasises continuous improvements through a systematic process and encourages efficient use of energy, which in turn contributes to reducing our GHG.

#### Energy Saved

**7,000 GJ energy saved is equivalent to**  
**292** passenger vehicles driven for one year

Additionally, PCG adopts PETRONAS' position to balance the issue of climate change and produce energy in an affordable and reliable manner.

We have been continuously measuring our GHG emissions and determining the various options we have to reduce emissions and energy intensity. This year, our GHG emissions stood at 6.87 million tonnes of CO<sub>2</sub> equivalent and is 2% lower than 2017. This is also reflected in our GHG intensity which stood at

0.85 in 2018, compared to 0.87 in 2017. PCG has also made substantial efforts to reduce GHG emission through the following energy efficiency improvement initiatives:

#### Incinerator Combustion Optimisation

PC Derivatives liquid incinerator requires high temperatures to destroy all organic materials as well as to maintain operating conditions which will avoid salt formation. Fuel gas is fed into the burner where the temperature is controlled by the amount of air intake. As a result of the optimisation, approximately 7,000 gigajoule (GJ) of energy is saved equivalent to 292 passenger vehicles driven for one year.

## Environmental: Responsibility to the Environment

### Reduce energy usage of running equipment

The wastewater treatment plant in PC Derivatives requires air blowers to operate the facility. As a result of thorough assessments conducted, instead of running the blower, we have utilised another source which is excess plant air from the plant utility air compressor, resulting in reduction in energy usage equivalent to electricity usage by 3,900 homes for one month.

**Energy Saved**

Energy saved in **PC Derivatives** is equivalent to **3,900** homes' electricity use for one month



ABF plant at Bintulu, Sarawak

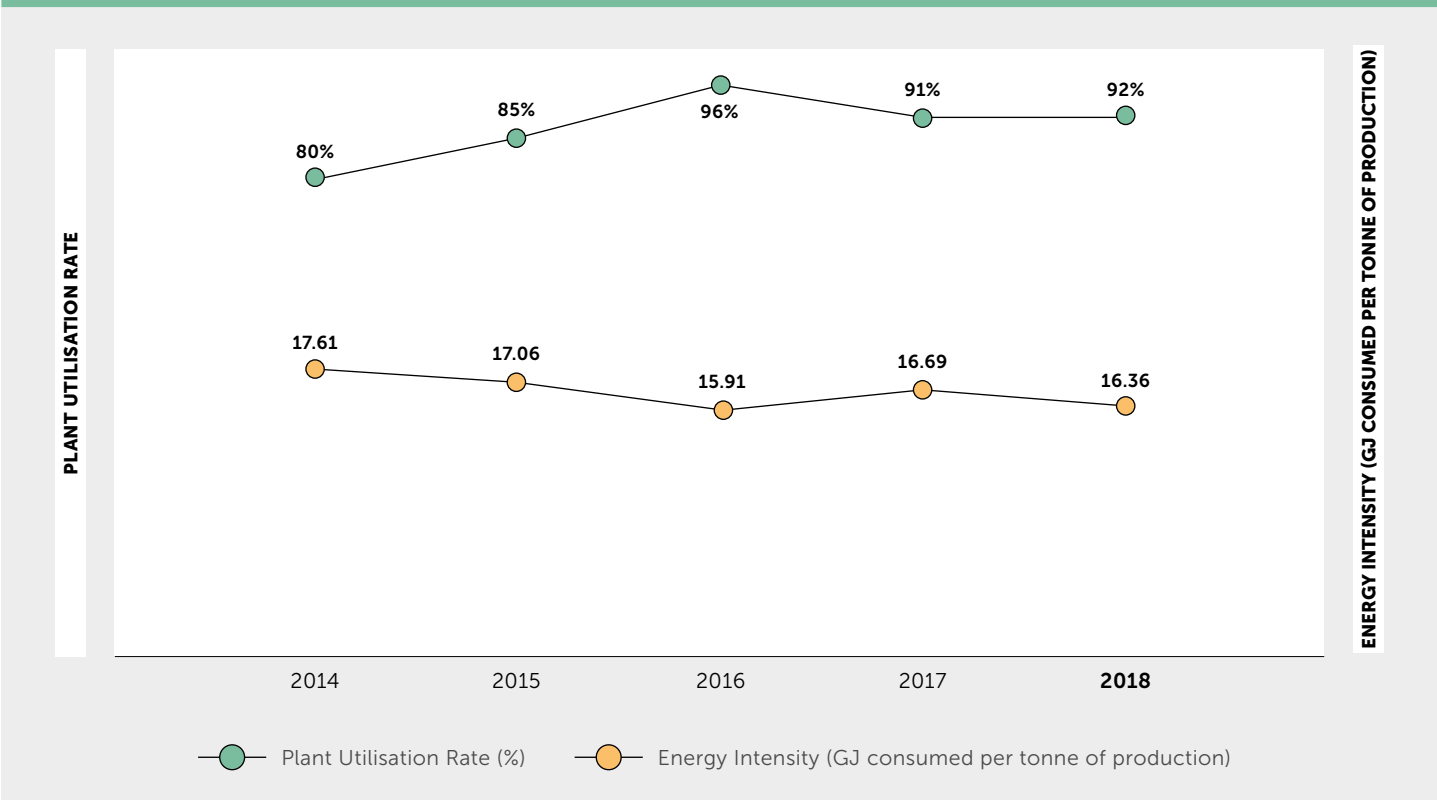
### Improving Steam Production

ASEAN Bintulu Fertilizer's (ABF) Waste Heat Boiler has been operating with higher outlet gas temperatures, suggesting ineffective heat recovery. Thus, a root cause analysis was conducted during turnaround in 2018. Through this, ABF has addressed the identified root cause which improved steam production by 17% without having to increase the amount of natural resource consumed.

### Reducing Emission from Flaring and Combustion

PC Fertiliser Kedah has implemented several initiatives to further reduce carbon emissions from the plant which is strongly tied with the energy initiative in 2017 and 2018. Among them are reduction of the use of assist gas to Urea Flare which managed to achieve the baseline target set for the improvement project. We reduced oxygen consumption from 2.5% to 2%, through automation, thus increasing the combustion efficiency.

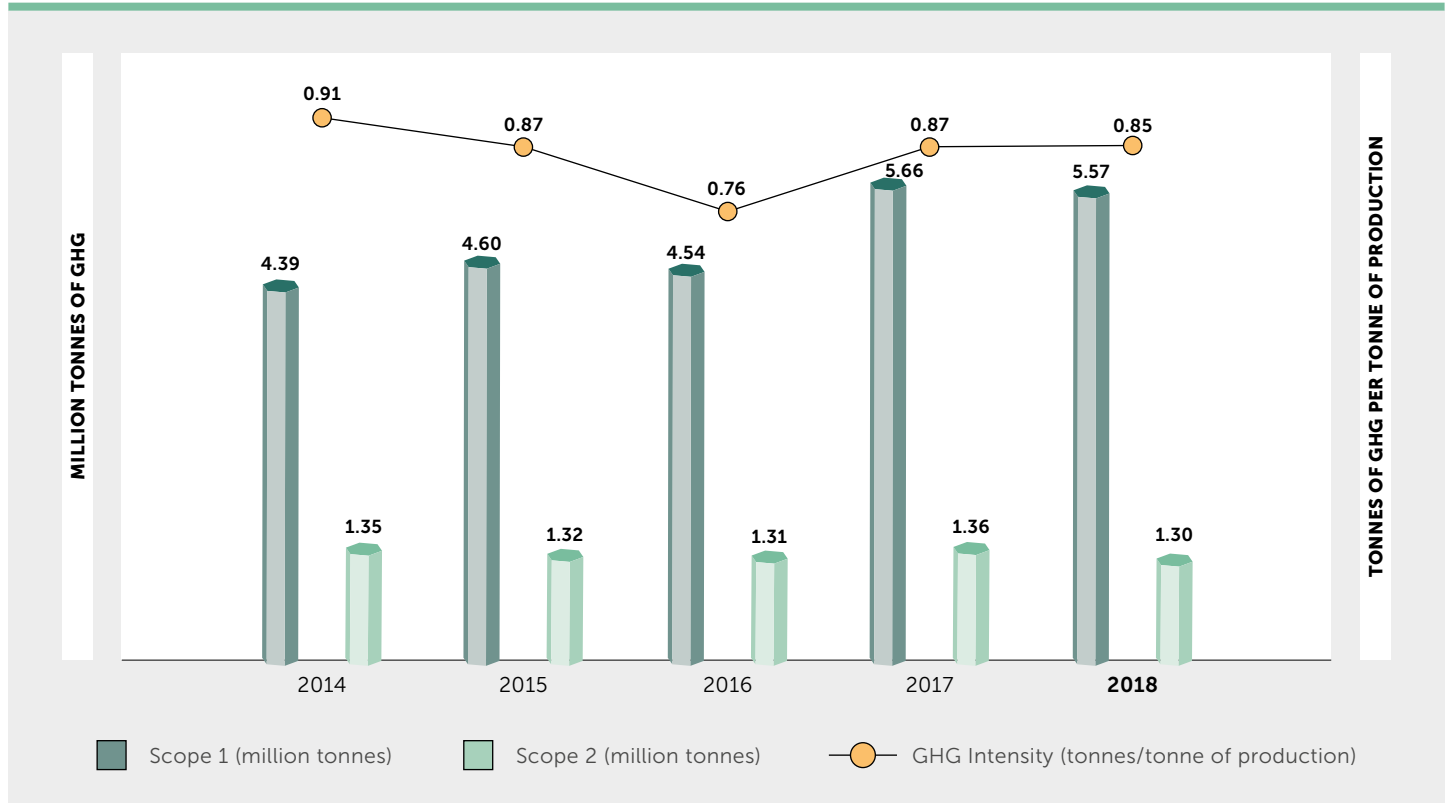
### Energy Intensity



This year, our energy intensity stood at 16.36, which is 7% less compared to baseline year 2014; and is on track towards our reduction target of 10% by 2020.

## Environmental: Responsibility to the Environment

### GHG Emissions



#### WHAT IT ALL MEANS

##### i. Scope 1 Emissions

GHG emitted from assets that are owned or controlled by PCG

##### ii. Scope 2 Emissions

GHG emitted to generate electricity and/or steam purchased by PCG

##### iii. GHG Emission Intensity

Total GHG emissions per unit of production

##### iv. CO<sub>2</sub>e

Carbon dioxide equivalent

### Leveraging on Technology to Reduce GHG Emissions

PC Glycols had initiated a proactive measure to reduce GHG emissions by leveraging on technology, technical capabilities and competent workforce. To date, PC Glycols was able to reduce its carbon dioxide emissions by 30% when it deployed a higher performance catalyst in their processes. This is equivalent to 24,000 tonnes which is comparable to taking more than 5,000 cars off the road annually.

### Freshwater Consumption

A key natural resource utilised by our manufacturing operations is water. Within our manufacturing processes, water is predominantly used to generate steam, as well as for cooling and cleaning purposes. In year 2018, our freshwater withdrawal stood at 37.88 millions m<sup>3</sup>, an increase of 7% from previous year. This is due to increased water intake for our utilities plant after undergoing heavy turnaround. We will continue to closely monitor all activities related to the use of water, in line with PETRONAS' Guidelines on Water Practices (WAPS) which was rolled out in 2017. By adhering to WAPS, our operating facilities are able to optimise operating conditions as well as maintenance practices to ensure efficient water use. In 2018,

we conducted a review of WAPS' implementation in collaboration with PETRONAS Downstream Office. The review was conducted to identify and address gaps in optimising our plant water system management practices as part of our freshwater management roadmap initiative which has taken place since 2014. This will form the basis for the plant to develop its freshwater withdrawal targets, thus ensuring sustainable water management in PCG.

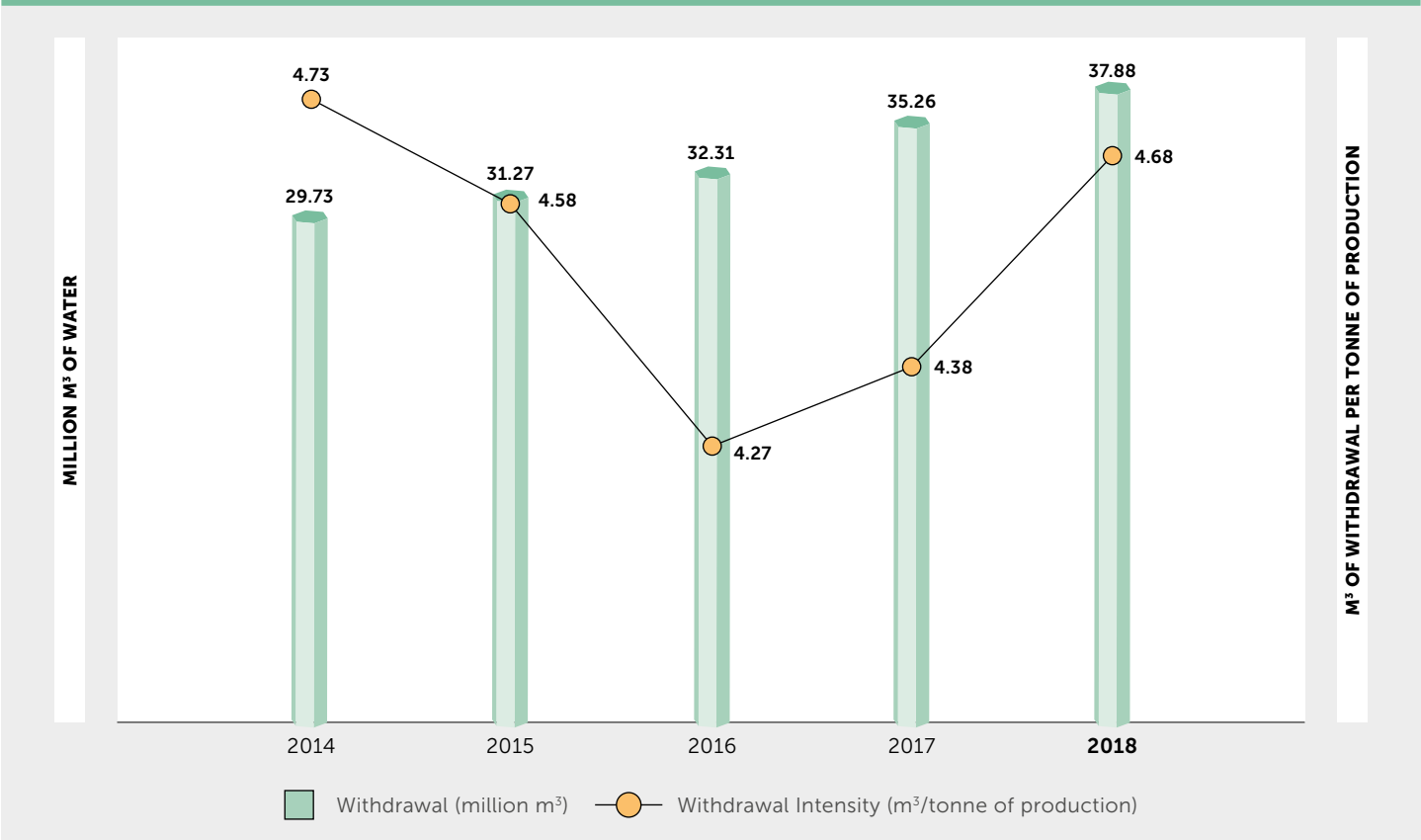
WAPS defines the operating conditions and maintenance practices for efficient water use. The list of WAPS guidance documents are as follows:

- Cooling water system
- Ion exchange system
- Reverse osmosis and electrode ionisation system
- Steam generator system
- Condensate system
- Control at source for wastewater discharges
- Wastewater collection and treatment system
- Sludge handling system



# Environmental: Responsibility to the Environment

## Freshwater Withdrawal



In 2018, our freshwater withdrawal was higher compared to previous years mainly due to commission of PC Fertiliser Sabah. We had also undergone the heaviest turnaround, which required higher water intake at our plants' utility facilities.

### WHAT IT ALL MEANS

- i. Freshwater**  
Non-brackish water, including potable water and river water

**ii. Freshwater Withdrawal**  
The volume of freshwater removed from municipal water supplies and other sources by PCG
- iii. Freshwater Withdrawal Intensity**  
Total freshwater withdrawn per unit of production

## Reduction of Demineralised Water Import at PC Olefins

Despite higher freshwater withdrawal in 2018, we prioritised the efficient use of water. At PC Olefins, we experienced limitations in the ability to reuse internal condensate which consequently increased imports of demineralised water from Utilities Kertih, thus affecting operating expenditure and water consumption. An initiative to reduce the demineralised water intake was executed through plant modifications, which was successfully reduced by 10%.

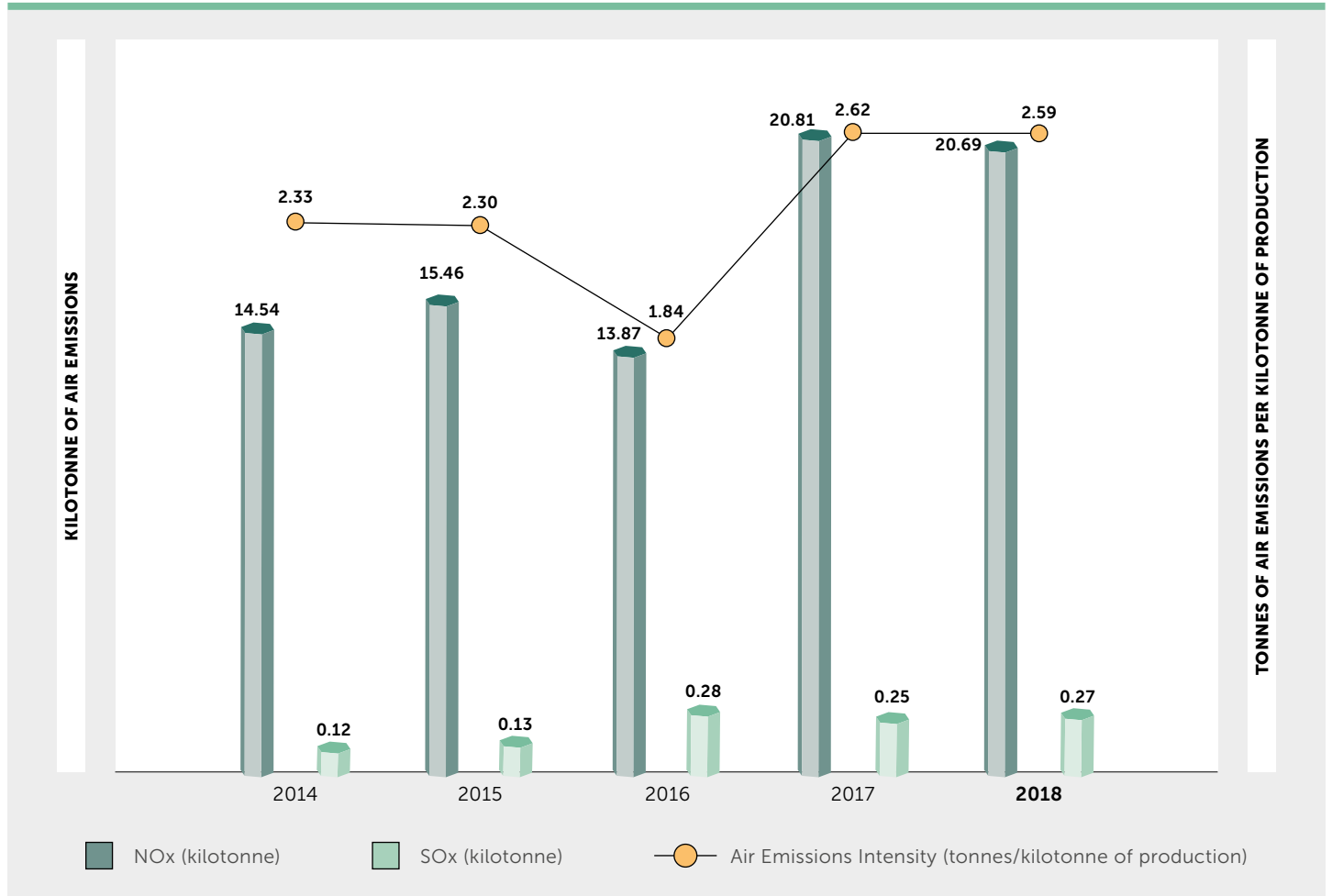
## Emissions to Air

Air and water emissions at our facilities are managed to minimise our impact on the environment. Guided by our HSE Policy, we reduce emissions at source utilising pollution control equipment. As an added safety measure, we monitor the quality of air and water surrounding our plants.

Our total emission and intensity were higher in 2017 and 2018 compared to 2016 due to heavy turnaround activities as well as commissioning of PC Fertiliser Sabah.

## Environmental: Responsibility to the Environment

### Emissions to Air



#### WHAT IT ALL MEANS

- NOx** - Nitrogen oxides, a common air pollutant
- SOx** - Sulphur oxides, a common air pollutant

- Air Emission Intensity** - Total emission of air pollutants (in tonnes of NOx and SOx) per unit of production

### Wastewater Discharges

We also monitor our emissions to water closely. A key parameter analysed is chemical oxygen demand (COD), which gives us an indication of how much organic matter is released into surrounding waters. All water discharged by PCG is channelled into rivers and the sea, and not into enclosed water bodies.

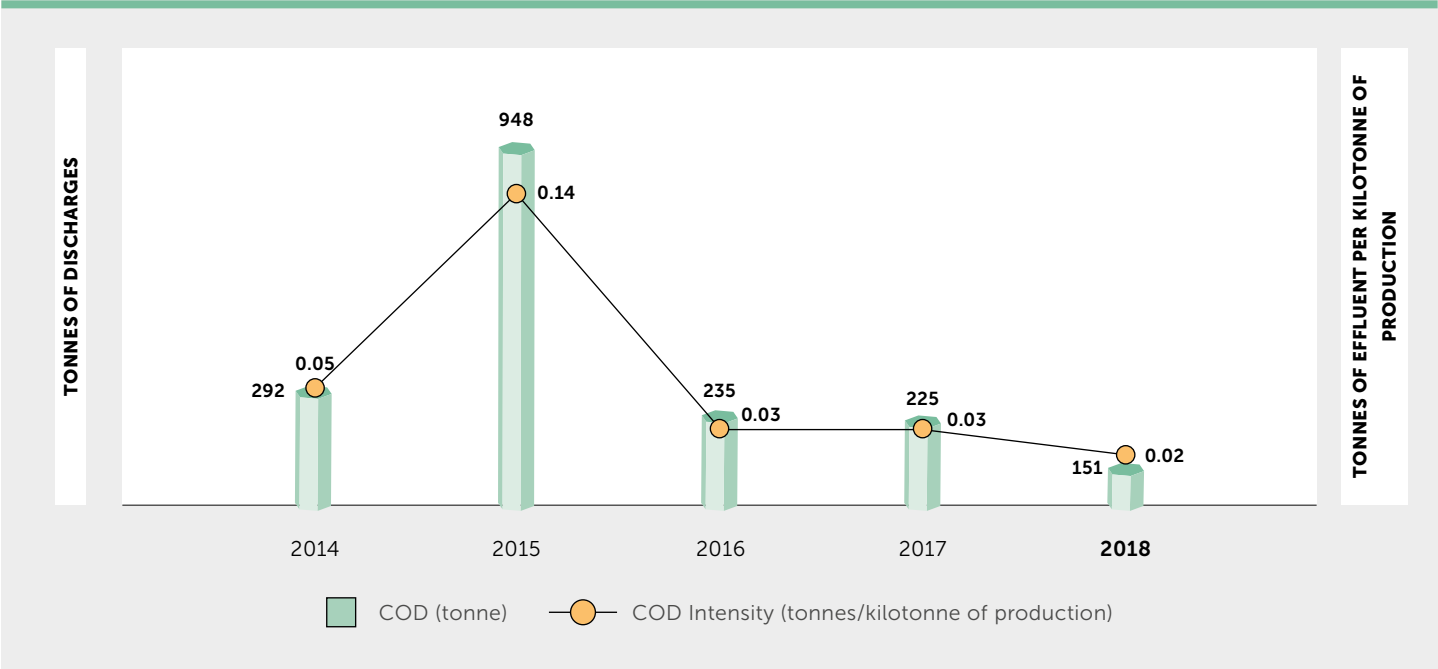
Since 2014, our wastewater COD discharges intensity has reduced by 60%. This is due to the implementation of several initiatives including WAPS, as well as improvements in our calculation methodology which reflects a lower value of COD discharges.



A PCG technician takes wastewater sample for analysis of COD, as an indication of how much organic matter is released into surrounding waters

# Environmental: Responsibility to the Environment

## Wastewater Discharges



## Compliance to Emissions Standards

At PCG, we remain deeply committed to ensure our stringent compliance with emissions standards. To ensure this, we pro-actively and protectively monitor the emission quality of all our operations and the surrounding environment.

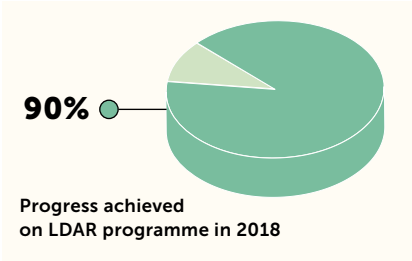
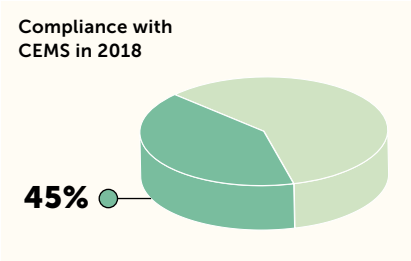
### Compliance to Local Government Regulations

A key piece of Government legislation which will impact upon PCG’s operations is the Environmental Quality (Clean Air) Regulations 2014 (CAR2014) which regulates emissions of air pollutants from industrial activities into open air. Scheduled to be in full force after June 2019, the new regulation imposes new legal requirements and emphasises the concept of self-regulation within the industry.

A key requirement of CAR2014 is to implement a Continuous Emission Monitoring System (CEMS) within operating plants. We closely monitor our progress towards CEMS installation compliance in which to date, we have progressed at 45% installation; with a target of 100% by June 2019.

We also regularly engage with the Department of Environment (DOE) to receive and provide feedback as well as exchange ideas. This demonstrates our strong commitment to comply with emissions standards. Our commitment to compliance has resulted in zero violations relating to air emissions regulatory compliance.

During the year, we implemented best practices to further reduce our emissions through the Leak Detection and Repair (LDAR) programme, which is a proactive structured inspection of joints, valves and potential leak points. The progress of this implementation is 90% against the planned programme for the year. Our target is to complete one cycle of LDAR monitoring for all of our plants by 2020.





## Environmental: Responsibility to the Environment

### Waste Generation

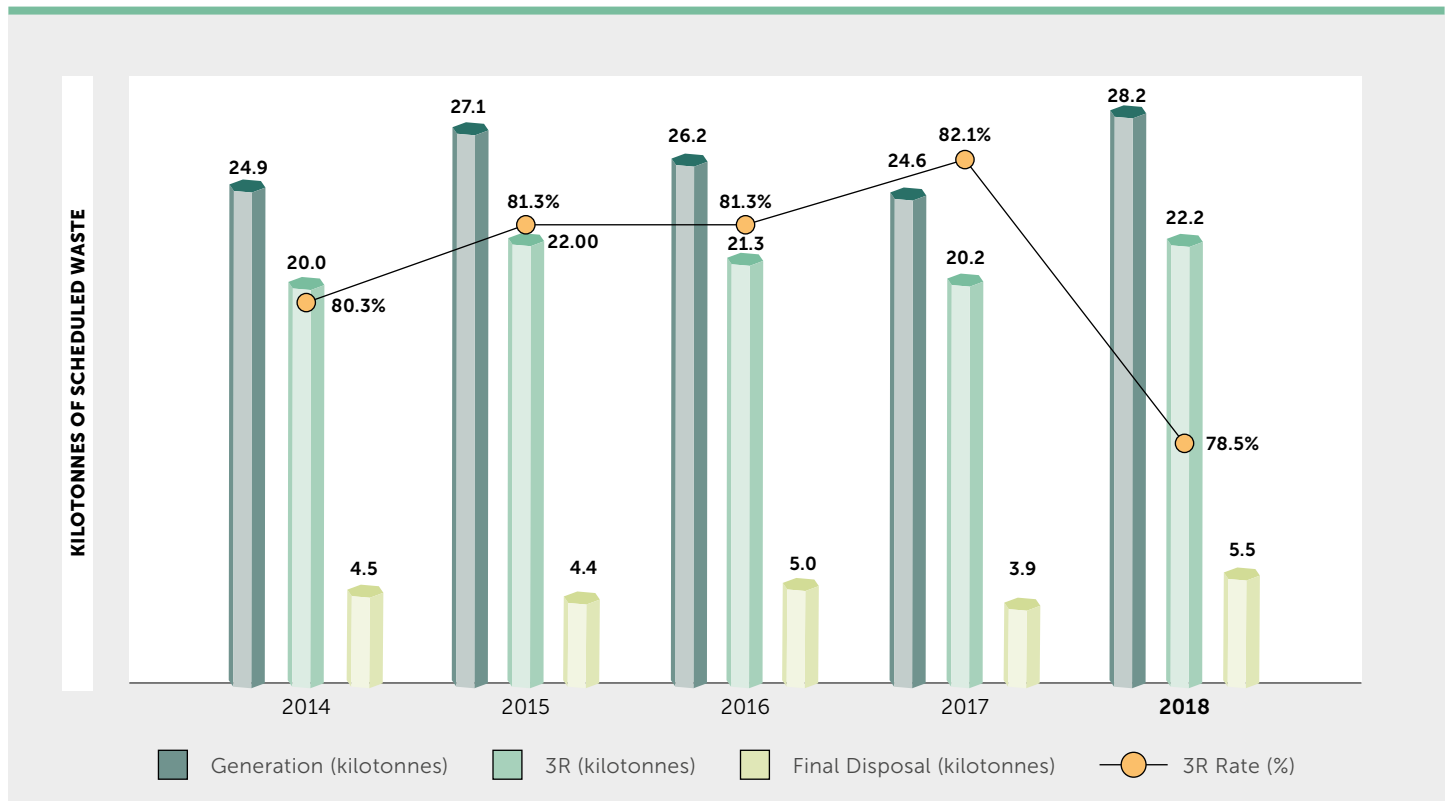
In our efforts to efficiently consume natural resources and minimise waste, especially hazardous waste, we practice a Waste Management System which minimises the environmental impact of our operations by reducing, reusing, recycling and/or recovering waste.

The majority of PCG's hazardous waste is recycled as fuel, solvents, lubricants or other beneficial products. Where possible, spent catalysts used in our processes are sent to specialised facilities where precious metals are extracted from them.

In addition, we quantify and inventorise all hazardous waste, which is then safely stored in dedicated areas within each manufacturing site before being transported to Government licensed waste facilities for appropriate treatment.

During the year, we recorded higher waste generation of 15% compared to 2017. This increase is due to turnaround activities which generates non-recycleable materials such as off-specification chemicals and mixture of hazardous waste. Despite 2018 being the year of the heaviest turnaround ever at PCG, we managed to increase our recycling volume by 10% as a result of our Environment Turnaround Preparedness initiative and a comprehensive Waste Minimisation Plan.

### Waste Generation



#### WHAT IT ALL MEANS

- Generated** - Quantity of hazardous waste produced
- 3R** - Quantity of hazardous waste sent for reduce, reuse and recycle
- Final Disposal** - Quantity of hazardous waste that is landfilled, incinerated or disposed with no further beneficial use
- 3R Rate** - Percentage of generated hazardous waste that is sent for 3R

### A Comprehensive Waste Management Plan

In 2018, PCG developed a comprehensive waste management plan for all of our plants undergoing turnaround. The waste management plan covers the identification, segregation, as well as minimisation of waste through various methods of 3R. As a result of the implementation of our enhanced waste management plan, we were able to improve our 3R volume by 1,950 tonnes.

## Social: Commitment to Health and Safety



At PCG, we remain committed to managing the inherent health and safety risks associated with our integrated operations through effective policies and inculcating a safety conscious work culture within our workforce.

We balance our business goal of providing our customers with the highest quality chemical products against Product Stewardship needs to ensure that our products do not adversely impact the environment or our community throughout all stages of its life cycle.

## Social: Commitment to Health and Safety



The Felt Leadership programme is an important part of our HSE culture, with regular management presence onsites giving their feedback on safety behaviours to our workers

### Occupational Safety and Health (OSH)

Ensuring the safety of our employees at our facilities and plants is a matter of paramount importance. We are guided by our Health, Safety and Environment (HSE) Policy, taking every reasonable precaution to eliminate the risk of work related injuries, thus protecting the well-being of our people. A strong safety mindset and safety culture reinforces individual responsibility amongst our employees to adhere to proper procedures. Our collective responsibility for each other ensures that all our workers return home safely each day. To further enhance our HSE culture during the year, our HSE department collaborated with PETRONAS Downstream Office to conduct roadshows for the "Jom Patuh dan Tegur" (Let's Comply and Intervene) programme which focuses on building a community of workers who care for each other. The "Jom Patuh dan Tegur" programme is practiced through management walkabouts involving observations, interventions and sharing of knowledge. The concept is also extended to the conduct of behavioural safety observations on site. As a result of our sustained efforts, the programme has strengthened the culture of intervention among our workers.

In practising a safe work culture, management regularly engages with our employees through safety events such as toolbox talks before beginning any specific job at a worksite. During these talks, the focus is on potential hazards and safe work practices which will help avert risk. Each manufacturing site has its own HSE Committee comprising employees and management representatives, whom are responsible for developing, promoting and evaluating measures to ensure employee safety and health. In January 2018, to further enhance our HSE efforts,

we put in place a Zero Tolerance (ZeTo) Compliance task force to address the high number repetition of Zeto Rules violations in 2017. Among the intervention plans were standardisation of consequence management and visual management, as well as involvement of security personnel as ZeTo rules ambassadors. As a result, ZeTo Rules violations have tremendously improved from 25 counts in 2017, to 11 counts in 2018.

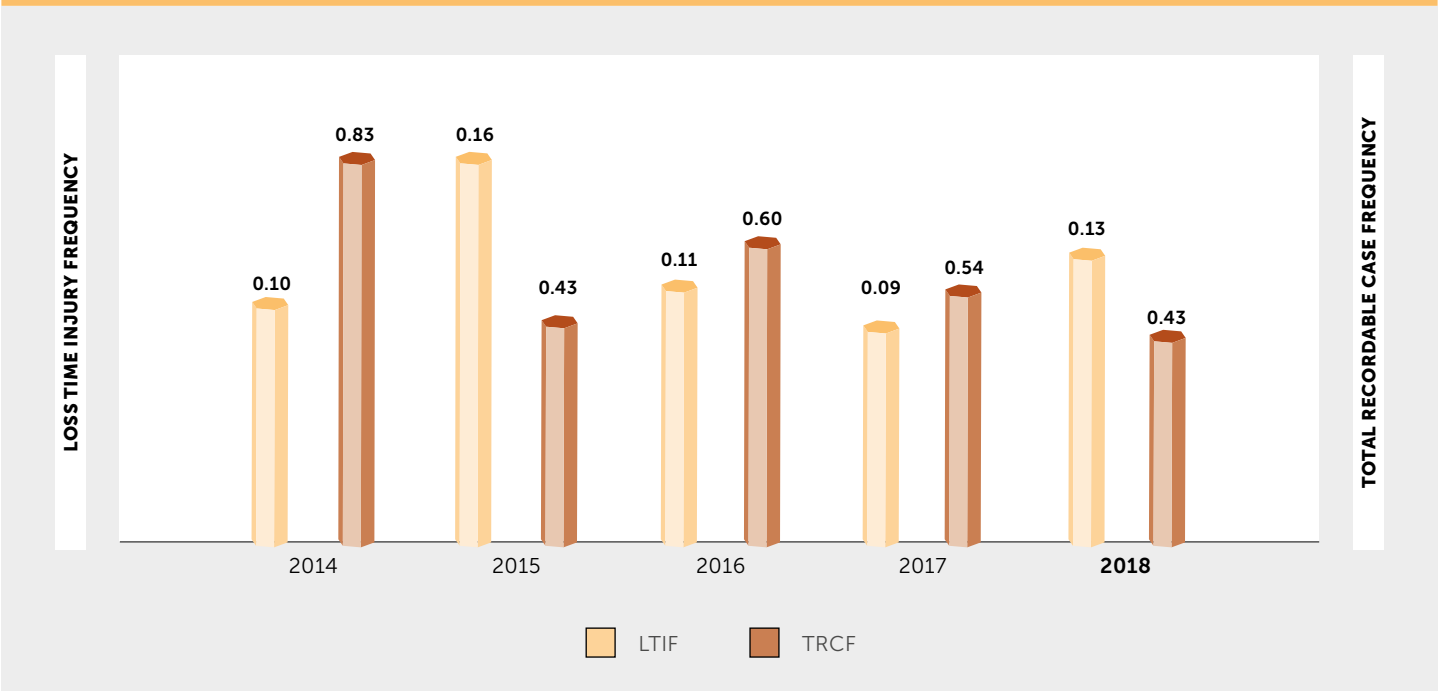
Among our HSE initiatives is Felt Leadership, which focuses on regular management presence and leadership by example with regards to safety behaviours at the workplace. Our Process Safety Management at our plants focuses on guarding against process safety risks, in order to protect our workers, local communities and assets, as well as preventing unplanned disruptions to our plant operations. In 2018, we were on track to enhance our OSH system of checks and controls within PETRONAS' Mandatory Control Frameworks. Our Total Recordable Case Frequency is 20% lower from the previous year and our Loss Time Injury Frequency of 0.13 is lower than the oil and gas industry benchmark of 0.27.

Also, continued monitoring compliance to Procedure Used Discipline ensures we adhere to Standard Operating Procedures for our operating facilities. Besides that, we standardise the Engineering Management of Change (EMOC) work process and procedures across all our facilities as part of improving our process safety governance.



Social:  
Commitment to Health and Safety

Occupational Safety Incidents



WHAT IT ALL MEANS

- i. **TRC: Total Recordable Case**  
Refers to the number of workplace injuries that require medical treatment beyond first aid
- ii. **TRCF: Total Recordable Case Frequency**  
The number of TRCs per million man-hours
- iii. **LTI: Lost Time Injury**  
The number of workplace injuries resulting in loss of productive work time
- iv. **LTIF: Lost Time Injury Frequency**  
The number of LTIs per million man-hours

Transportation Safety

In the chemicals industry PCG operates within, accident and release-free chemical logistics and distribution are critical to our business sustainability. In line with this, PCG is dedicated to safe transportation and storage of chemicals along the entire value chain of our operations, from when chemicals are supplied to us, to the transport of end products to customers.

To maintain our safety commitment, we only utilise transporters who share our safety and environmental commitment. Our transporters are required to have effective safety procedures, including adequate staffing to do the job properly. They also have to adopt effective management control and record-keeping systems, and maintain a record of continuous improvement on safety performance.



Management walkabout involving vehicle inspection



Felt leadership with our inland transport contractor

## Commitment to Health and Safety

We monitor our land transport service providers through a number of programmes and ensure that they meet the standards we have set. These programmes are:

- **Drug and Alcohol Test Inspection**
  - Assurance that drivers are not influenced by drugs or alcohol while driving
  - Performed randomly at the loading point, on the road or at the service provider's depot
- **Vehicle Inspection**
  - Assurance that only road-fit vehicles are used
  - Inspection is performed prior to loading. Unqualified vehicles are rejected or sent for repairs
- **On-the-Road Surveillance**
  - Assurance that drivers follow all traffic rules and regulations
  - Monitoring is conducted by deploying a surveillance team on the road, or through in-cab cameras
- **In-cab Surveillance**
  - Assurance that drivers apply appropriate driving techniques
  - An assessor sits inside the vehicle as it is being driven for observation and to test the driver's knowledge of defensive driving.
- **Drivers' Log Book**
  - Assurance that drivers have required hours of rest time
  - Inspection of drivers' rest time is performed at the loading point prior to loading. Drivers not meeting the required hours of rest will be replaced
- **In-Vehicle Monitoring System (IVMS) Surveillance**
  - Assurance that drivers follow the approved routing, road regulations, speed limit and other safety parameters
- **Hauliers' Leading KPIs submission**
  - Assurance that management monitors and analyses leading HSE indicators of the transport companies engaged, closing any non-compliance gaps for continuous improvement
  - Conducted on monthly basis

It is unfortunate that during the year we recorded a fatality which involved our inland transport contractor. Our health and safety commitments remain steadfast, both in internal HSE policies and third party HSE advocacy. With HSE as our top most concern, we had a plan in place to deal with challenges arising from this incident and extended our assistance to the affected person and his family. We had conducted a safety stand down to reflect and learn from this experience. Concurrently, we identified areas of improvement to strengthen our HSE commitment with continuous investments towards enhancing our safety culture. We will be vigilant in ensuring that our culture of health and safety permeates to our contractors through upskilling HSE competency of inland transport contractors, intensified direct engagement with drivers on site, enhancement of Road Transportation Operational Guideline and improvement of fleet monitoring system.

### Emergency and Crisis Management Exercises

In order to effectively evaluate our manufacturing facilities' internal emergency response and preparedness, we conduct emergency exercises on a regular basis. These exercises also provide us an accurate gauge of our abilities to coordinate with external emergency supporters such as the Fire and Rescue Department, Police Department, Civil Defence Force, local medical facilities and neighbouring plants.

For year 2018, a total of seven facilities conducted Tier 2 and 3 emergency management exercises as planned.

**Social:****Commitment to Health and Safety**

Head of Manufacturing, Mahadzir Rani (third from right) at a Felt Leadership programme onsite

Date	Participating Facilities	Emergency/Crisis Exercise Scenario
2 Aug 2018	PC Olefins & PC Derivatives	<b><u>Tier 2 Full Scale Emergency Exercise</u></b> This exercise simulated search and rescue plus first aid activity involving multiple casualties at PC Olefins storage area and PC Derivatives areas.
29 Aug 2018	ABF	<b><u>Ex-Kenyalang III – Tier 2 Full Scale Exercise</u></b> This exercise simulated ammonia release and pool fire including multiple casualties at the incident area.
1 Oct 2018	PC Ammonia PC LDPE	<b><u>Ex-KEMBARA X – Tier 2 Full Scale Emergency Exercise</u></b> This integrated exercise involved three Kertih-based facilities, namely PC Ammonia, PC LDPE and BP PETRONAS Acetyls which simulated multiple hydrocarbon fires, high level rescue and multiple casualties at the incident area.
5 Nov 2018	PC Ethylene	<b><u>Ops Cemas 13 – Tier 2 Full Scale Emergency Exercise</u></b> This exercise simulated propylene storage jet fire scenario which is located at PC Ethylene utility area, including multiple casualties at the incident area.
22 Nov 2018	PC Fertiliser Sabah	<b><u>Ex-Tembadau – Tier 3 Full Scale Crisis Exercise</u></b> This is the only Tier 3 exercise for PCG in 2018 which was also the first ever emergency exercise conducted by PC Fertiliser Sabah. The exercise simulated explosion and fire of synthesis gas of compressor equipment, ammonia release, heavy black smoke release and mass evacuation process.

## Commitment to Health and Safety

### Process Safety

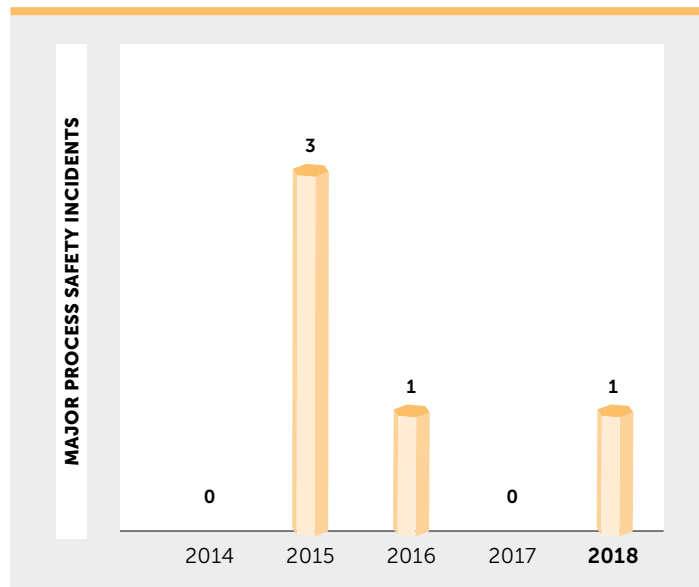
As an important element of our HSE policy, process safety ensures the integrity of our plant processes through three principles which are "Design it Right, Operate it Right and Maintain it Right".

By applying these principles, we are able to safeguard our people, local communities and assets by preventing against process safety risks.

During the year, we recorded one fire incident at PC MTBE flare area without involving any injury and casualty. We have identified the root cause and several interventions have been performed comprising upgrading and modification of affected facilities, retraining of personnel and improvement in operating procedure to prevent recurrence of the incident.

None of the process safety incidents resulted in spills that cause significant environment impact.

### Process Safety Incident



#### PCG EMOC Standardisation Programme

In 2018, we undertook a key effort in the area of Process Safety by embarking on a collaborative effort to standardise the EMOC work processes and procedures across all our facilities. We have set up a special taskforce consisting of key personnel from our various plants to drive the effort.

#### PS3Sixty by PC Ammonia

A tailored programme called Process Safety 3Sixty (PS3Sixty) has been designed to inculcate the right process safety culture and mindset. As the name implies, PS3Sixty focuses not only on technical personnel, but also on non-technical team, contractors and neighboring communities.

One of the main focus areas of PS3Sixty is educating contractors on process safety through PSiCARE programme. The lessons learnt from contractor-related incidents are discussed during workshops and engagement sessions. The outcome from these sessions were disseminated to their team and applied during job execution to avoid similar incidents from repeating. On top of that, they were made aware of the significance of safe work practices and excellent contractor's workmanship on a plant's operation. Safe work practices and excellent contractor's workmanship can help minimise loss and plant downtime due to maintenance and shutdown activity. Commercially, this will result in manpower cost reduction, less repair time and less maintenance cost and time which will consequently result in higher production.

The PS3Sixty programme also helps to sustain safe and reliable plant operations by proactively managing risks and hazards through Focus Learning programmes. Detailed analysis of the failure and lessons learnt from past incidents and the assessments carried out to identify the activities and processes which could contribute to incidents help prevent the occurrence of similar incidents in PC Ammonia. Inevitably, by minimising risks and hazards of activities and processes, the safety of staff and contractors can be assured. For example, the action items developed through Focus Learning has helped to improvise the loading of hydrocarbon condensate in PC Ammonia to withstand the possible overpressure rupture of ISO container. Subsequently, pollution of air, water and land can be minimised.



Safe work processes and procedures are vital to ensure reliable and safe plant operations



## Social:

# Commitment to Health and Safety

## Product Stewardship

Product Stewardship is at the core of how we conduct our business and operations as a responsible chemical company. We regularly and systematically conduct product risk assessments on our chemical products to ascertain their risk category. This allows us to communicate accurate and sufficient information to our customers and stakeholders for safe handling and use of our products. By adhering to the guiding principles of product stewardship, we enable our stakeholders to maximise the value from our products with minimum impact to health and environment.



Product Stewardship seminar conducted in Bangkok, Thailand

Our Product Stewardship focuses on the following priority areas, which are based on business and industry requirements:

- **Regulatory Compliance**
  - Adhering to all product regulatory requirements in the countries that we serve and provide comprehensive responses to customer enquiries
  - Proactively track and monitor country-specific regulatory requirements to ensure compliance which include global chemical management, dangerous goods transportation, banned/restricted chemical management and Halal Assurance Systems (HAS) and Chemical Weapon Convention and Strategic Trade Act
- **Product Risk Characterisation and Management**
  - Ensure that our new and existing products are safe for use, by providing recommendation for their proper handling throughout the entire supply chain
  - Manage product life-cycle risks at the business planning stage, research and development, product realisation, distribution, application and disposal
  - We develop Global Product Safety Summaries (GPSS) as guided by the International Council of Chemical Associations (ICCA) in order to tabulate accurate information on the hazards and risk mitigations for our chemical products
- **Product Hazard Communication**
  - Produce Safety Data Sheets (SDS), labels, product safety summaries and declarations to protect all stakeholders involved in the life cycle of our products
  - Produce, maintain and manage SDS and labels through efficient SAP system which enables customers and public to access accurate and updated information via <https://sds.petronas.com.my>
  - Regularly educate our customers, suppliers and distributors on product hazards through regular direct engagement and Product Stewardship seminars
- **Product Sustainability**
  - Establish product life cycle inventory on selected products
  - Embrace the best practices of the Responsible Care® programme as a signatory to the Responsible Care® global charter

## Social: Commitment to Health and Safety

### OUR ACHIEVEMENTS TO DATE

#### Food Contact Certification

Packaging materials which are in contact with food such as plastic, rubber, paper, coatings and metal receive a food contact certification which authenticates the safety of such packaging. The United States Food and Drug Administration and the European Union Commission Regulation for food contact material regulations are the most widely recognised standards. Compliance with these regulations ensures the safe use of our products.

To date, the following polymer product grades have received food contact certifications:

Food Contact Certification	Polymer Product Grades that are certified
<b>United States Food and Drug Administration</b> (Federal Regulations USFDA 21 CFR 177.1520, CFR 178.2010)	• LDPE (5 grades) • LLDPE (5 grades) • HDPE (3 grades)
<b>European Union Commission Regulation for Food Contact</b> (EU Commission Regulation 10/2011)	• LDPE (6 grades) • LLDPE (3 grades) • HDPE (3 grades)

#### Global Product Safety Summaries (GPSS)

As of 2018, we have completed the GPSS for 19 of our key chemical products, which are currently published at the ICCA portal to allow transparent and easy access by the public.

#### Chemical Regulations

We continuously identify and manage all risks linked to substances which we manufacture and market to ensure that our products are in compliance with country specific and international regulations.

We regularly maintain REACH\* regulation through selected product registration and submitting annual reports of exports where applicable. We also proactively monitor the status of PCG product listing in newly-established national chemical inventories. The latest inventories published are for Thailand and Vietnam.

In 2018, a spot audit on PC Derivative in Kertih, was conducted by the Organisation for the Prohibition of Chemical Weapons (OPCW) reaffirmed that our systems and processes are in compliance with Chemical Weapon Convention (CWC) regulations.

\* REACH is the abbreviation for Registration, Evaluation, Authorisation and Restriction of Chemicals

#### Product Stewardship Programmes

In 2018, we conducted a total of six product stewardship seminars in five countries that reached a wide ranging audience of 375 people who are in direct contact with our products. This enables our customers to maximise the value from our products with minimum impact to health and environment.

#### Product Stewardship Programmes

Product	Venue	Number of participants
Methanol	Kuala Lumpur	130
Methanol	Thailand	40
Polymer	Indonesia	60
Polymer	the Philippines	60
Chemicals	Kuala Lumpur	80
Chemicals	Vietnam	45

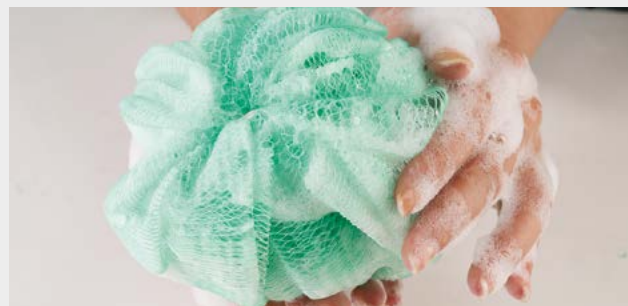
#### Responsible Care®

As a signatory to the Responsible Care® global charter we fully embrace the best practices of the Responsible Care® programme. In 2018, we won 17 responsible care awards in the categories of:

- Distribution Code
- Community Awareness and Emergency Response Code
- Pollution Prevention Code
- Process Safety Code
- Employee Health and Safety Code
- Product Stewardship Code

#### Halal Certification

PCG products are halal certified according to Malaysian Standards (MS) 1500:2009 and MS 2200-1:2008 which enable us to serve customer segments that produce halal-certified consumer goods, such as food packaging, personal care and cosmetics. Some 80 of our product grades are halal certified thus enhancing our brand value as a preferred chemical company.



We produce halal-certified chemicals for use in personal care products



# Social: Caring for Society



Since inception, PCG has grown through the years to become the leading integrated chemicals producers in the nation.

Aside from developing the country's petrochemical industry, we have a deep rooted desire to share our success with the communities who live in the areas where we operate. Our aim is to contribute to the symbiotic development of society, through our various meaningful Corporate Social Responsibility (CSR) programmes, which focus on the well-being and empowerment of our communities.

## Social: Caring for Society

### Corporate Social Responsibility

PCG's CSR Strategy is aligned with PETRONAS' Corporate Sustainability and CSR Framework. We are committed to implementing community programmes through three broad pillars of Education, Community Well-being & Development, and Environment.

Our Education initiatives reach out to students in schools within the areas of our operation, whilst our Community Well-being & Development initiatives seek to empower the people and families living within our operational footprint. As for our Environment programmes, they are closely aligned with environmental conservation efforts, as well as creating awareness on responsible plastics usage in line with the New Plastics Economy Global Commitment led by the Ellen MacArthur Foundation and UN Environment which promotes a circular plastics economy focusing on 3R for plastics. More than 33 CSR programmes were conducted in 2018 reaching out to more than 13,000 people across our areas of operation.

#### Education



*The Back-to-School programme paves the way for children to have a brighter future*

#### Back-to-School

Knowledge is power. PCG's Back-to-School programme provides the opportunity for underprivileged school children around our areas of operation, to improve their academic performance through knowledge of Science, Technology, Engineering and Mathematics (STEM), as well as assisting them with school supplies at the beginning of each academic year. Our annual assistance of school supplies helps to alleviate the financial burden of their parents while bringing cheer to the students as they look forward to the start of the new academic year.

In 2018, we collaborated with PETRONAS Human Resource Division's Education and Learning Department (EdL) by participating in EdL's STEM Fairs. Focused on engaging learning experiences and developing scientific communication skills, the events had mini-shows, exhibits, games and quizzes, trails and mini-competitions. At these STEM Fairs, we also collaborated with PETROSAINS on their Play Smart programme, which consisted of an engaging science show, creative thinking workshop 'i-think', and a hands-on creative challenge with STEM elements.



## Social: Caring for Society


### Back-to-School Programme 2018

Areas	PCG plants involved	Collaboration	Reach
Kertih, Terengganu	PC Ethylene PC Polyethylene	PETRONAS Education and Learning Department, Pejabat Pelajaran Daerah	100 students
Gurun, Kedah	PC Fertiliser Kedah		400 students
Labuan	PC Methanol	Pejabat Pelajaran Daerah, PETROSAINS	100 students
Sipitang, Sabah	PC Fertiliser Sabah		200 students



 Back-to-School programme convey knowledge and spread cheer to school children



 Students and teachers at a SHOC4School event, where PCG imparts knowledge on safe handling of chemicals to school children

### Safe Handling of Chemicals for School (SHOC4School)

As a responsible chemical producer which prioritises Health and Safety at our plants, we take the responsibility to share our skills and knowledge on safe handling of chemicals. Through the SHOC4School programme, we share our knowledge with the younger generation to build their understanding and capability to safely handle chemicals, thus ensuring their safety.

Since 2015, we have taken the initiative to train students and teachers involved in chemical-related subjects on how to manage chemicals responsibly by giving them the right exposure and knowledge on safe chemical handling. The programme is conducted through PC LDPE, which has dedicated its time and commitment to educating science teachers and laboratory assistants from schools within its area of operation. The aim is to enhance safety in the handling of chemicals in laboratories, hence contributing towards creating a safe and conducive learning environment at schools through classroom training, discussion forums and activities.

In 2018, we educated 78 secondary school students and teachers from 17 schools around our plants in Kertih as well as 10 officials from District Education Department. We have further elevated the programme by adding elements of PCG product knowledge and plastic awareness talk in collaboration with MPMA. This correlates with PCG's business as producer of chemicals and polymers, and our desire to help create greater awareness on responsible plastics usage. During the year, we had one certified trainer and 30 PCG volunteers from PC LDPE, PC Ethylene and PC Polyethylene who were involved as facilitators in this programme.

## Social: Caring for Society

### Community Well-being & Development



PCG staff presenting donations raised to underprivileged communities from volunteerism activities conducted at the PCG Charity Bazaar

### Empowering our Employees to Give Back to Society

A crucial factor of all our CSR programmes is our employees' involvement as volunteers, as they contribute their time and efforts to assist our communities towards enhancing their development and well-being. To empower our people with their philanthropic and charitable efforts, PCG has put in place various platforms to help them contribute towards community well-being.

#### PCG Charity Bazaar

The PCG Annual Ramadan Charity Bazaar is a collaborative effort to raise funds, organised by PCG staff with the spirit of giving back to society. The aim is to lessen the burden of the underprivileged communities in their preparation for the festive. The initiative also promotes volunteerism among our employees, besides being a platform for our people to get together and work as a team to raise funds for the needy.

In 2018, PCG collaborated with Kelab Sukan dan Rekreasi PETRONAS (KSRP) and held a charitable donation drive, reaching out to PETRONAS staff and over 20,000 KSRP members. The bazaar featured vendors selling all sorts of goodies such as clothes, food items, accessories, home décor items and many more for the festive preparation. An e-auction was also conducted where PCG management contributed personal items to be auctioned with the proceeds donated to charity. We also organised donations for PETRONAS

employees during the month of Ramadan to support this initiative. Proceeds from the drive were donated to charitable causes. A total of RM49,000 was collected from this initiative, which was presented to selected charity homes in the Klang Valley and Dana Assyakirin.

#### Visits to Less Fortunate Communities

During the year, we organised visits to charity homes around Klang Valley to present proceeds from our staff donations and charity bazaar to the less fortunate. Visits were organised to Rumah Titian Kasih in Titiwangsa, a home to 95 children and 35 single mothers, the disabled and senior citizens; Rumah Penyayang Ulin Nuha in Klang, home to 21 orphans; and Rumah Jagaan Anak Yatim Kundang, Rawang which houses 35 orphans. A portion of the proceeds were also used to purchase food and household items, goodie bags, as well as prizes for games and activities planned during the visits.

### Total Amount of Charitable Contributions

Year	2016	2017	2018
<b>Amount given to charity</b>	RM13,250	RM19,050	RM49,000
<b>Charity house benefitted</b>	<ul style="list-style-type: none"> <li>• Rumah Kasih Harmoni</li> <li>• Rumah Anak Yatim Shifa in Gombak</li> </ul>	<ul style="list-style-type: none"> <li>• Rumah Anak Yatim Persatuan Pertubuhan Islam Buah Hatiku</li> <li>• Pusat Perlindungan PERNIM</li> </ul>	<ul style="list-style-type: none"> <li>• Rumah Titian Kasih, Titiwangsa</li> <li>• Rumah Jagaan Anak Yatim Sri Kundang</li> <li>• Rumah Penyayang Ulin Nuha</li> <li>• Dana Assyakirin</li> </ul>

## Social:

### Caring for Society

#### Blood Donation Initiative

PCG's Blood Donation Drive is an avenue through which our employees can give back to society by donating their blood. It answers the nation's need for adequate blood supply for hospitals. The average Malaysian hospital requires about 2,000 packs of blood daily while a hospital in the Klang valley requires about 500 packs daily. Unfortunately, blood supply at hospitals tends to drop below the daily 3,000-pack safe limit during festive seasons and school holidays.

In light of the critical need for blood supply, PCG initiated an employee blood donation drive at our headquarters with the objective of encouraging volunteerism and instilling a sense of responsibility to contribute to society. Teams from PCG, PETRONAS Upstream Health, Safety and Environment, PETRONAS Upstream Centre of Excellence and KLCC Urusharta joined forces for the first time at the event organised in October 2018. A total of 282 packs of blood were collected, surpassing the previous 269 packs collected in a blood donation drive held in 2016. Donors with blood group type "O" contributed 125 packs, followed by blood group type "B" with 81 packs, type "A" with 58 packs and type "AB" at 18 packs. The total volume of blood collected would be able to save 846 lives.



PCG's Blood Donation Drive provides our employees a means by which they can give back to society by contributing blood



PCG staff donating blood at our Blood Donation Drive

#### First Aider for Every Home (FAiEH)

As part of our efforts to empower local communities with essential first aid knowledge, PC Ammonia's FAiEH programme focuses on equipping the community with first aid knowledge and skills, so that they are able to respond quickly and effectively during emergency situations. Accidents can happen to anyone, anytime or anywhere. First aid skills are essential for everyone, including children, as they can improve a victim's chances of survival and recovery.

The FAiEH programme has proven to be beneficial to members of the community, especially school children, as it ensures that they can help others in cases of emergency, whether it is within their home or out in public areas. In 2017, the programme was held for more than 200 community leaders in Paka and Kertih areas. Following positive feedback from our participants, in 2018, the FAiEH programme continued with 200 pre-school teachers and Department of Social Welfare representatives from the same area. Skills they acquired in the programme included first aid techniques, being able to identify and handle venomous animals, treating injured people, as well as helping choking or out-of-breath victims by giving them Cardiopulmonary Resuscitation (CPR).



**Environment**


Students painting murals at a PCG Be Green event

**PCG Be Green**

PCG Be Green is our programme which is closely aligned with the New Plastics Economy and our journey towards rethinking the future of plastics and advocating for a circular economy where plastics are always reused and never become waste. With PCG as the producer of the main component in the production of plastics, we are championing this effort to educate the public, especially the communities around our areas of operation, to be responsible plastic users for the benefit of our well-being, as well as for the environment and future generations.

The programme supports the Government's efforts to promote 3R, cleanliness, and the reduction of 40% in terms of emission intensity by the year 2020 against baseline level of 2005. It is part of our efforts to promote the responsible use of plastics and encourage 'green behaviour' towards achieving a sustainable future. It is impossible to live without plastics in this day and age, therefore educating the public, especially the younger generation on the proper use of plastic is crucial to protect and preserve the environment.

The programme which is held in collaboration with MPMA, aims to increase plastic awareness, especially on its benefits and correct usage, impact on the environment and best waste management practices. This collaboration with MPMA is particularly impactful in educating the public on responsible plastics usage.

With this programme, MPMA holds regular talks on plastic recycling and waste management for school children, while also highlighting the versatility and applications of plastic, and maintaining its sustainable and responsible usage. In 2018, the programme was held at two locations in Malaysia.

In 2018, the two events held during the year reached out to a total of over 1,300 students and 70 teachers. PCG and MPMA delivered talks on plastic education and 3R awareness. In Bintulu, we collaborated with the Bintulu Development Authority who gave talks on anti-littering campaigns and contributed 3R bins to the school. Students were able to take part in a several activities such as essay competitions on plastic awareness, mural painting and tree planting. Over 50 fruit trees were planted as a symbolic gesture of conserving the environment. In Kuantan, we conducted a 3R Treasure Hunt and held a Science Show in collaboration with PETROSAINS to demonstrate the versatility and importance of plastics in everyday life. PCG also donated 3R Bins to the school for their use.



Social:  
Caring for Society

ecoCare

ecoCare, PCG’s environmental conservation initiative, has enhanced our reputation as a socially responsible corporate citizen, by supporting Sustainability Development (SD) in line with FTSE4Good requirements. The programme which has been established for 13 years in collaboration with Malaysia Nature Society (MNS), is aimed at promoting awareness and understanding of the conservation and preservation of mangrove and coastal ecosystems to public.

ecoCare is a unique programme which encourages volunteers from local communities living within our operational footprint to work together towards environmental conservation efforts. Volunteers also include our own staff members, who work together with the community in mangrove replanting and seedling activities, to help preserve the rich biodiversity of mangrove swamp habitats in the areas of our plant operations.

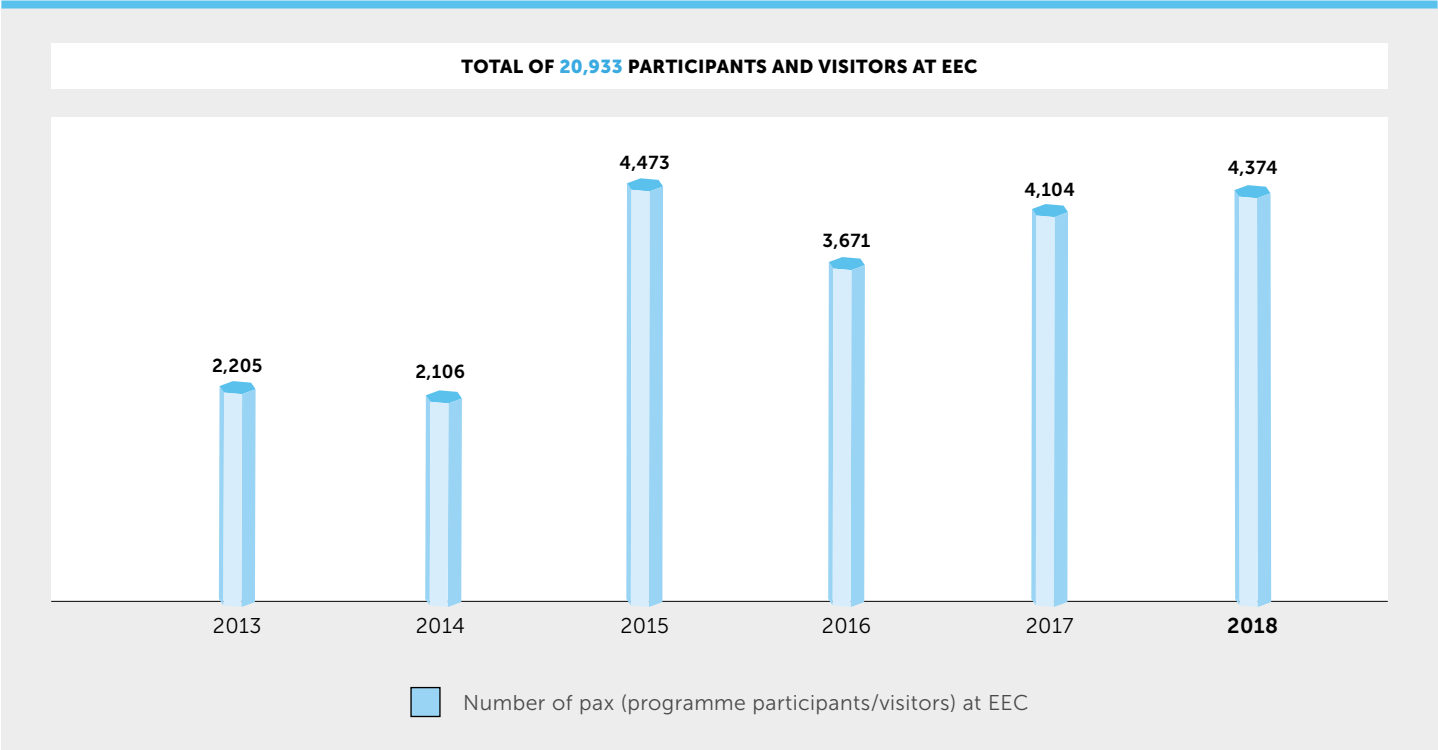
In 2013, we had developed the ecoCare Environmental Education Centre (EEC), the first environmental centre in the East Coast of Peninsular Malaysia. It features displays, exhibits and information relating to the Kertih River ecosystem,

its unique coastal terrain and biodiversity. It also serves as a resource centre with facilities to promote awareness and education on environmental conservation amongst schoolchildren, teachers and the community. The centre has become a popular venue for researchers and university students to conduct research and internship placements.

In 2018, the number of researches and visitors to EEC increased compared to the previous year, as a result of increased number of programmes held. It is a good indication that the centre has established itself as a research and education centre.

ecoCare continued to focus on promoting volunteerism amongst PETRONAS staff and local community members by holding the ecoCare Nature Hunt 2018. This programme also serves as an avenue to showcase and appreciate staff and local communities for their contribution to ecoCare throughout the years.

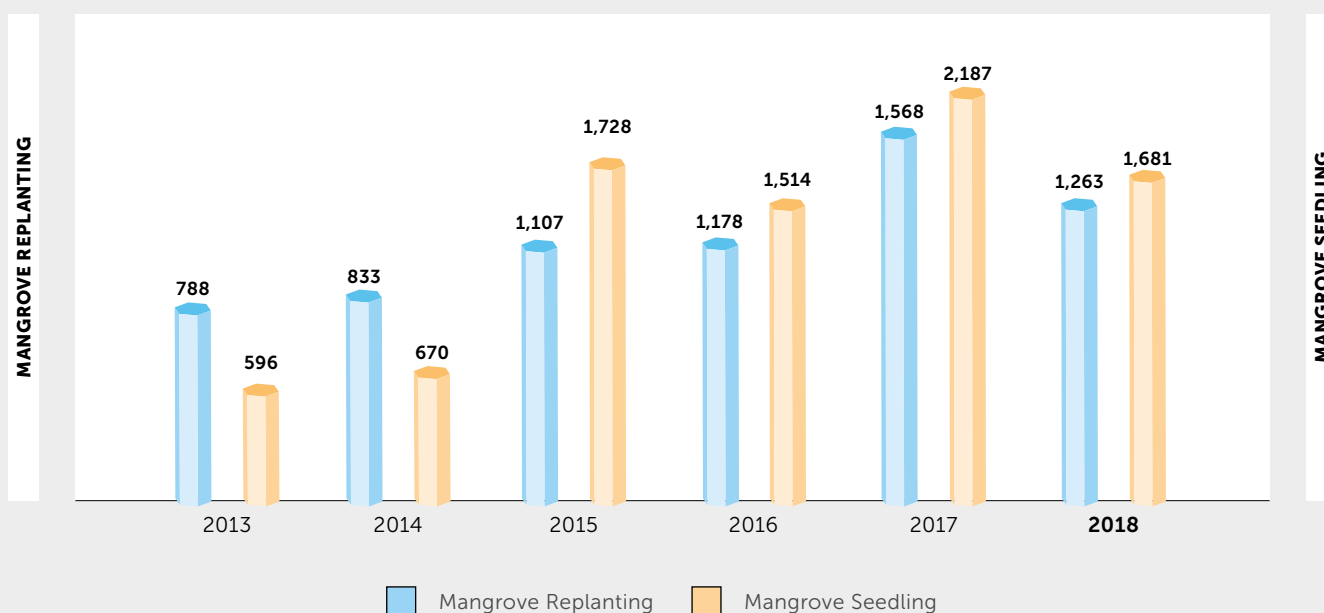
Number of EEC Participants



## Social: Caring for Society

### Mangrove Replanting and Seedling

**TOTAL OF 6,737 MANGROVE REPLANTING AND 8,376 MANGROVE SEEDLING**



### Number of Programmes

Year	Number of Programmes at ecoCare	Visit/Site Survey
2013	38	29
2014	33	21
2015	80	32
2016	66	38
2017	69	44
2018	81	52
<b>Total</b>	<b>367</b>	<b>216</b>

Visitors includes:

- PETRONAS staff
- Schools
- Higher institutions of learning
- Private and non-governmental organisations
- Members of the public
- Government bodies



ecoCare volunteers conducting replanting and seedling activities



Visitors at the EEC, the first environmental education centre in the East Coast of Peninsular Malaysia

Social:  
Caring for Society

Workforce Training and Development

A wide range of workforce training and development programmes are an integral part of our commitment to ensure the continuous professional development of our employees. Our aim is to help our people realise their potential and progress their careers, as well as to keep enhancing our organisational competencies and capabilities. Our capability development programmes are guided by PETRONAS' competency framework.

PCG's Capability Development Programmes (CDP) covers both functional and leadership skills development. Our CDP approach subscribes to a 10:20:70 ratio philosophy of 10% formal classroom training, 20% coaching and mentoring, and 70% on-the-job application of new techniques learnt.

Functional Skill Development

During the year, we successfully established and conducted a number of functional skill development programmes. Our functional skill programmes are available to all segments of our employees. The key programmes conducted were the Accelerated Capability Development (ACD) Programme, Online Functional Assessment (OFA) and PETRONAS Competency-Based Assessment System (PECAS).



Workers discussing work safety and procedures before commencing activities



Training session at one of PCG's skills development programmes



Training conducted as part of PCG's talent development platform

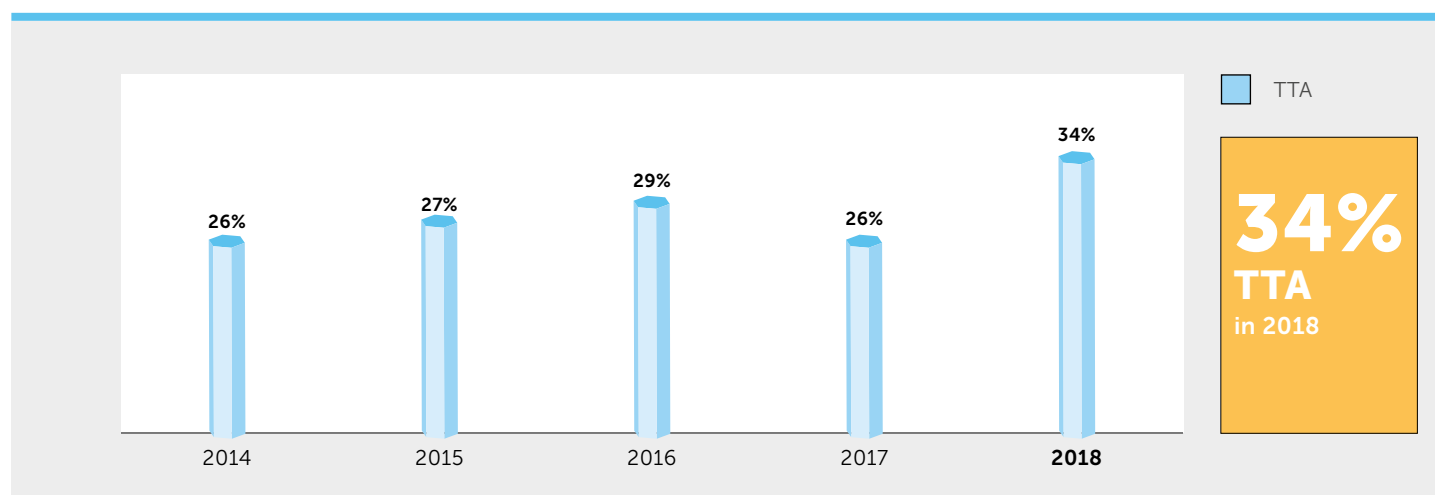


## Social: Caring for Society

### Accelerated Capability Development (ACD) Programme

The ACD is a programme for technical executives that adopts a blended learning approach centred around the core components of assessment, coaching and training which is continuously implemented in PCG. In 2018, PCG adopted the "ACD Booster Programme" group-wide, which saw subject matter experts share their on-the-job knowledge to junior engineers, so as to speed up these young engineers' Time-to-Autonomy (TTA). We believe that shortening TTA is a critical ingredient of our success, which provides us the assurance that our staff are truly competent. As at end 2018, our ACD autonomy achievement stands at 34% group-wide as compared to our target of 30% for the year, with PC Ammonia achieving the highest autonomy rate of 60%.

### Percentage of PCG Technical Executives population whom have reached autonomy



### Online Functional Assessment (OFA)

To help non-technical executives with their career progression, we conduct an annual Online Functional Assessment (OFA) to identify competency gaps of our non-technical executives. In doing so, we are assisting our employees identify and plan learning and development activities that will help them to close their skill gaps, thus aiding in their general career progression within PCG. The OFA consists of self-assessment which allows staff to assess themselves prior to their superior's assessment.

### PETRONAS Competency-Based Assessment System (PECAS)

PECAS is an assessment platform for non-executive technical (NET) staff comprising technicians and operators at our plants and facilities, including both domestic and wholly-owned international companies. PECAS is used to certify the competency of our NET staff, and to develop their competencies in specialised disciplines to ensure that targeted competency levels are achieved. As at December 2018, 94% of our NET had enrolled in PECAS.

### New Initiatives in 2018

During the year, we embarked on two initiatives to further strengthen our employees' technical competencies, namely the TP Network Programme and the ACD Booster Programme.

The TP Network programme is a platform to accelerate talent readiness from specific technology backgrounds to fill up TP positions across PCG. The first TP Network was piloted for Skill Group (SKG) 16.3 in January 2018, followed by TP Network programmes for Instrumentation and Electrical.

The ACD Booster Programme aims to upskill ACD Booster participation on TTA speed-up, facilitating in depth discussions on identified top priority technologies with common gaps among ACD candidates. To cultivate a sense of ownership in talent development, involvement from middle managers and subject matter experts are encouraged. To date, 47 ACD Booster programmes have been implemented, resulting in an autonomy achievement of 34% compared to our target of 30% for the year.

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#### Targeted Capability and Skills Development Programmes

We have in place programmes and efforts towards enhancing the skills and capacities of our employees within specialised functions. For our commercial staff, the digitalisation of Operational Excellence Results 2 (OER2) is a powerful tool which allows them to enhance their efficiency towards better serving our customers. A number of digital platforms and tools were implemented during the year to assist our staff to perform better on the job, and the requisite training was provided for them to utilise these tools efficiently. Among the training provided were the Data2Act, an analytic and intelligence tool which enables greater service levels by providing immediately actionable data for our people to enhance their decision-making. As well as that, the Operational Excellence Management System (OEMS) Enterprise Content Management system (ECM) platform known as OEMS ECM 3.0, which is used to retain knowledge and best practices within our management system. Also incorporated was the customer relationship management tool of Sales Force Automation (SFA) to enhance our marketing and sales productivity, quicken response times and improve integrated marketing communications. We also codified our Work Process during the year, to empower our people to conduct their jobs more productively and effectively.

For our manufacturing staff, namely our plant workers, we enhanced their capacities through the Turnaround Upskilling Apprenticeship programme, conducted in collaboration with PCG's Turnaround Centralised Service (TACS), our Turnaround

Main Mechanical Contractors (TAMM), the Construction Industry Development Board (CIDB) and Akademi Binaan Malaysia (ABM). This programme is aligned with national strategic agenda under the CIDB Apprenticeship programme via the National Blue Ocean Strategy (NBOS). The CIDB Apprenticeship programme is part of collaborative industry efforts to develop human capital to achieve high productivity in accordance with the Construction Industry Transformation Program (CITP). CITP targets to develop 5,000 competent apprentices between 2016 and 2020. In line with this, CIDB has identified relevant trades which are in high demand within the construction sector. These series of deliberate, sequential steps will reduce our dependency on foreign labour.

The Turnaround Upskilling Apprenticeship programme was designed to grow the capabilities and skills of our turnaround workforce. Upon graduation and certification, the apprentices were given real job experiences at designated PCG and non-PCG turnaround events. It serves as a platform for necessary exposure and credentials to equip them with the right skills and behaviors, and prepare them for upcoming turnaround executions. This will enable PETRONAS to have a predictable turnaround performance in the longer term.

#### Industrial Training

PCG provides technical and non-technical industrial training to undergraduates in areas related to their academic backgrounds. In 2018, 356 students participated in industrial training with PCG.

#### Leadership Development Programme and Succession Management

PCG has in place a structured and progressive leadership programme to identify talents and develop their leadership capabilities at every level of their career development path. Guided by the PETRONAS Leadership Framework, the programme's objective is to have a larger pool of leaders who can drive and steer our business objectives.

Within the early stage of an executive's career, they undergo the PETRONAS Potential Leaders Programme which focuses on developing their skills so that they are able to attain the breadth and depth of functional skills required to prepare them for their future role as leaders in their respective areas. The identified executives will undergo leadership training modules developed by PETRONAS, thus exposing them to a range of skills and techniques which hone and enhance their leadership skills as their careers progress with PCG.

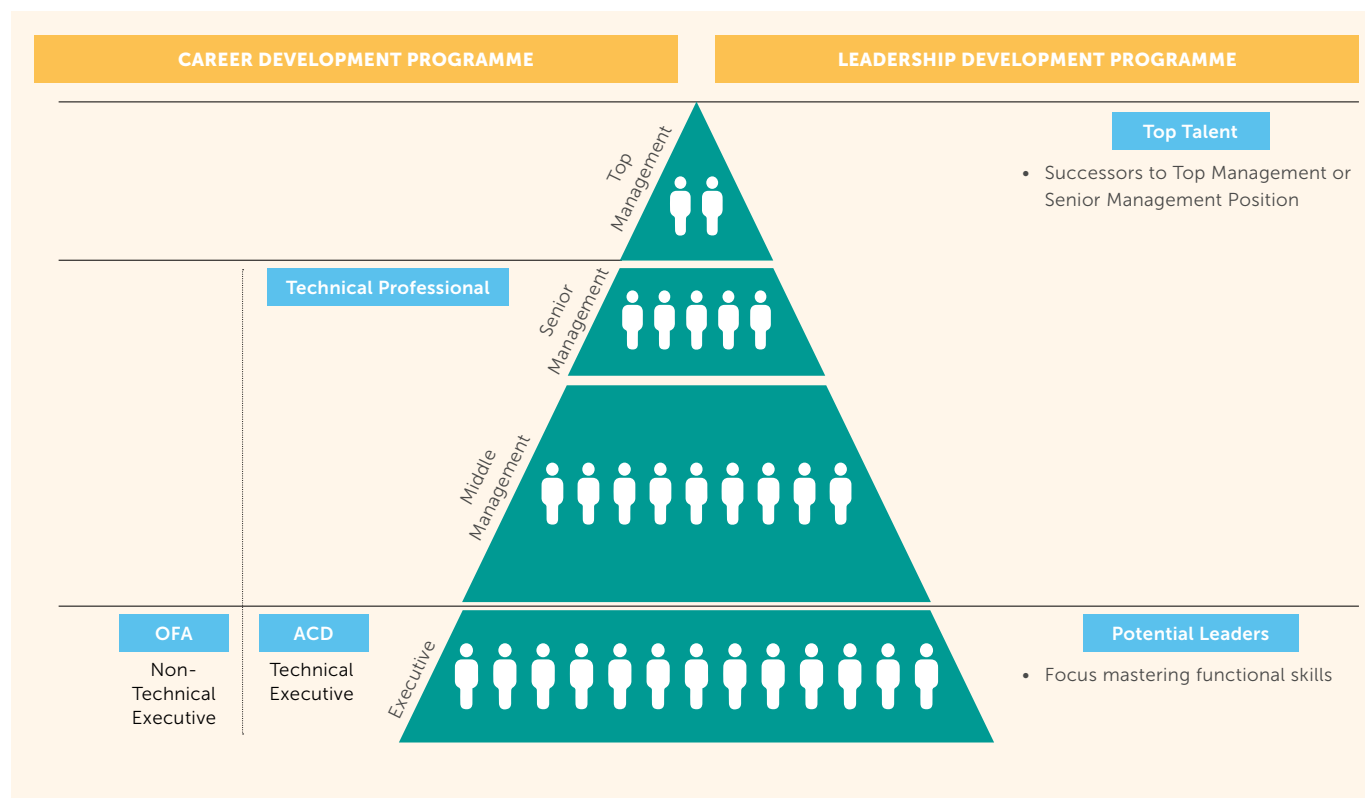
Leadership development at junior executive level is based on an identification and approval process by PCG management. The candidate is selected based on approved selection criteria. A junior executive development plan is then established and implemented for successful candidates, involving both line leaders and the Human Resource Management department.

Within the middle to top management level, PCG leaders undergo signature leadership programmes befitting their role and responsibility within the organisation. These leadership modules cover skills and techniques designed to bring about self-realisation and self-actualisation, as well as business project assignments.

Top talent identification begins at middle management level with the objective of identifying talents that have the potential to assume critical positions in the future. Identified candidate will undergo series of assessment to gauge their potential, strength, area for development and career aspiration. A series of talent review and succession planning sessions were conducted to identify further development exposure for top talents, as well as the critical positions that they can potentially assume as a successor.

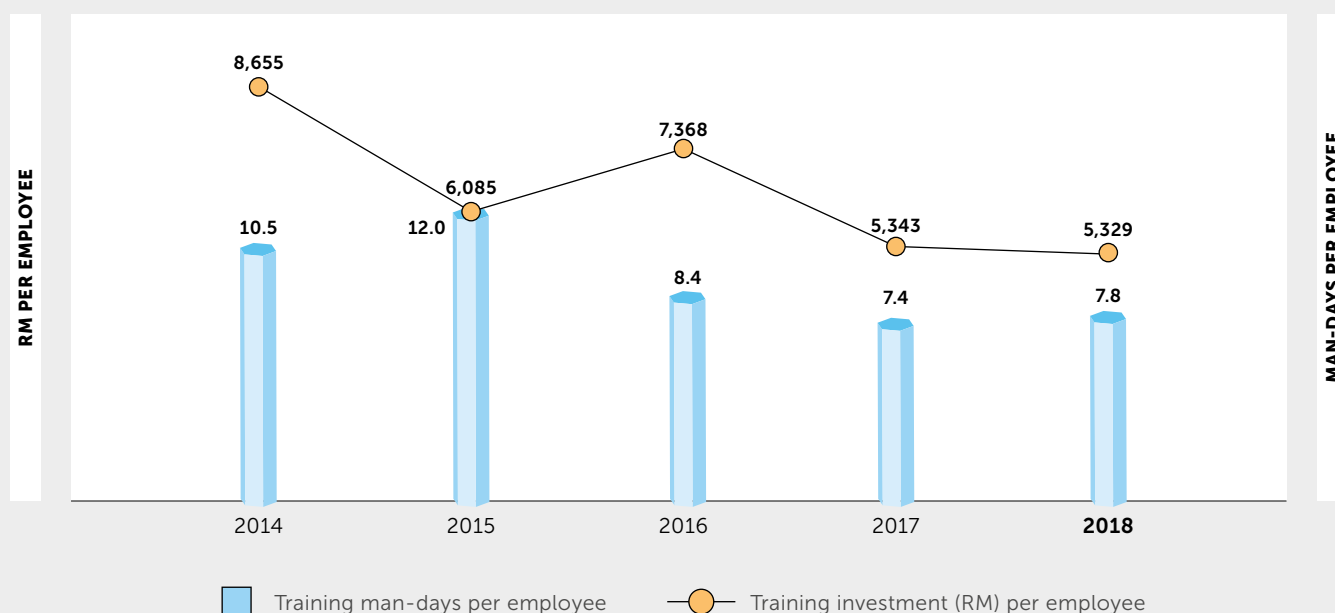
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### Career & Leadership Development Programme



### Training Investment

Our training investment reduction is due to utilisation of digital based learning initiated in 2017 which has reduced the overall training cost. The digital based learning has resulted in increased training man-days per employee by 5%.



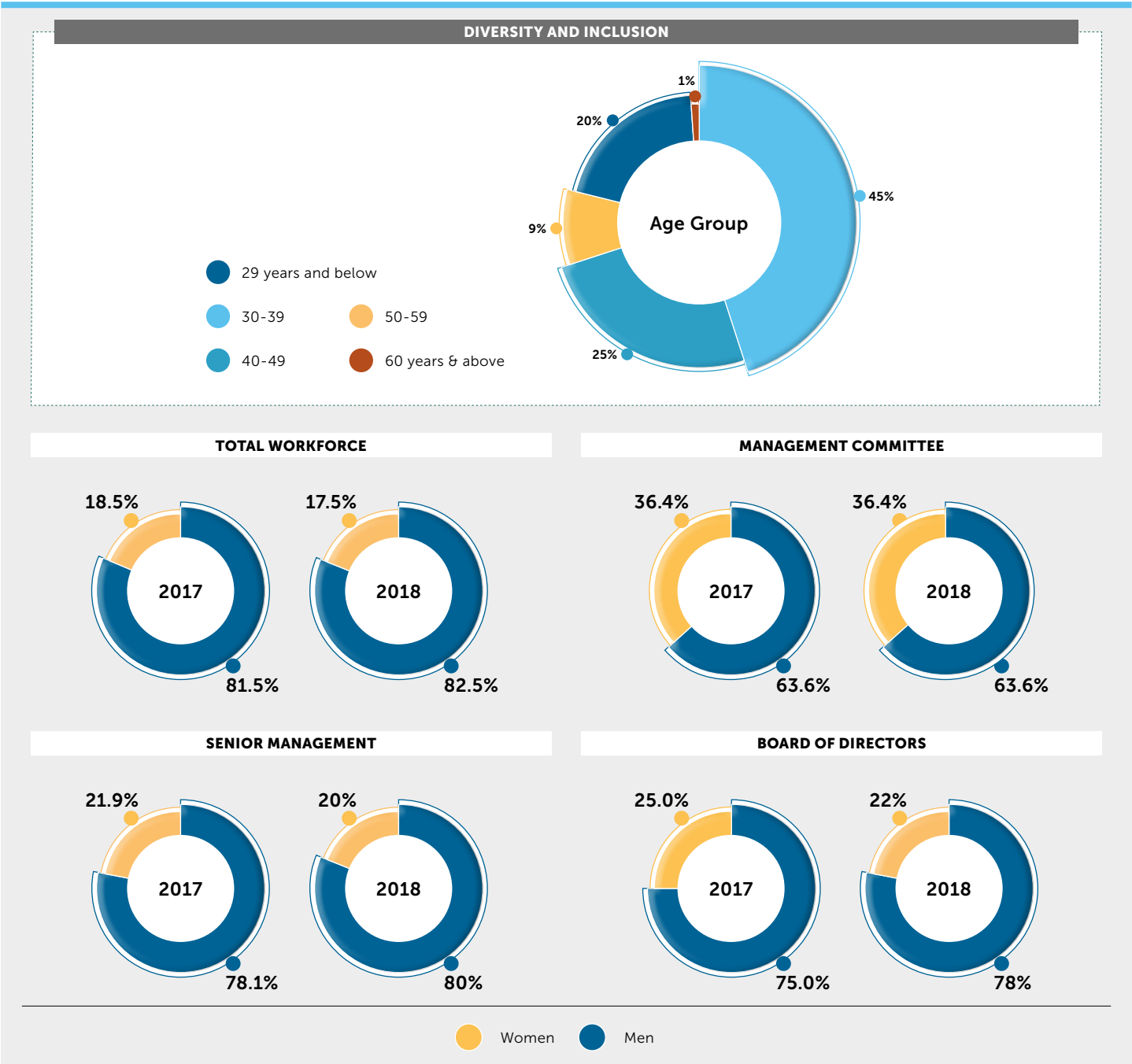


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Workforce Diversity and Inclusion

Within our talent pool, we have a diverse workforce who are able to bring their different opinions and perspectives to the table, thus broadening our organisational viewpoints and enhancing our decision-making. Company-wide, female employees make up 17.5% of our total workforce. This is influenced by the largely male dominated representation of the workforce in our plants. However, at the Board level, gender balance is enhanced with 22% female representation.

We have various policies that support our female employees and promote their career progression to encourage greater female representation at the Group. We have implemented various work life balance initiatives to help our female employees, such as the Flexible Work Option, along with access to nursing facilities within our headquarters and plants. Female executives are strongly encouraged to participate in the PETRONAS Leading Women Network, so that they can learn from other successful professional women as well as benefit from networking opportunities. We also have policies in place which support women and men in their roles as parents, such as allowing pregnant women to return home early from work and providing new fathers with paternity leave.

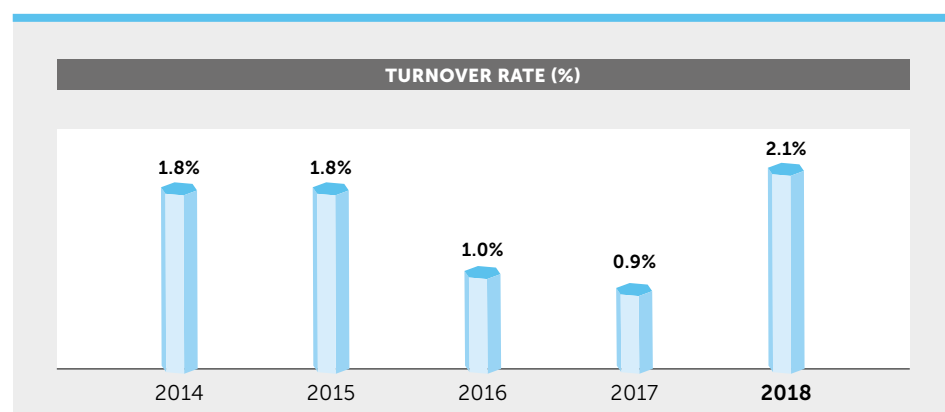


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### Employee Retention and Attrition

During the year, our staff turnover rate increased by 1.2% as compared to last year in pursuing our efforts towards high performance workforce against the market benchmark of 3%. In creating the right working environment for our people, we have adopted PETRONAS' work life balance practices for our employees.

### Turnover Rate



### Employee Engagement

Employee engagement sessions play an important role in employee motivation and alignment of their behaviors with our company values and business objectives. In 2018, we conducted the following engagement sessions:

- Engagements with unions – a total of four engagements were conducted with unions during the year; two with Kesatuan Pekerja-Pekerja Optimal Chemicals Sdn Bhd (KEPKO) and another two with Kesatuan Kakitangan Petroliaim Nasional Berhad (KAPENAS). As a result, we achieved 90% resolution on issues raised.
- A total of four PCG Staff Engagement and Appreciation Day were conducted during September and October in all locations of our operations.
- A "HR Kopitiam" session was conducted in March 2018 using an open day concept where we have various service booths available for staff to enquire and obtain the services with regards to their personal income tax matters, Social Security Organisation (SOCSO), and medical insurance among others.

### Work-Life Balance

Our work-life balance initiatives are intended to provide our people with greater autonomy over their time, thus empowering them to achieve a balance between their work-life obligations. A number of programmes exist to assist our people to balance their personal needs against the demands of their job as follows:

- The Flexible Work Option which was introduced in 2017 provides our people with the flexibility to choose their working hours on a daily basis.
- We practice a Compressed Work Week which allows our people to complete their job at noon on the fifth day of the week upon completion of the required 39 working hours for the week.
- Allocation of daily passes for our staff to access the Twin Towers Fitness Centre facility for those who choose to exercise within KLCC areas before and after the office hours.
- Employee referral programmes for employees who would like to seek professional assistance from experts on personal and family matters.

In 2018, two work-life balance enhancements were effected as follows:

Enhancement	Details
<b>Hajj-Umrah Leave</b>	<ul style="list-style-type: none"> <li>Paid leave up to a maximum period of 40 consecutive calendar days to perform Hajj and/or <i>umrah</i>.</li> <li>Hajj and <i>umrah</i> leaves will be granted once in the employee's service period with the Company.</li> <li>Eligible for all permanent employees who are Muslim under the common PETRONAS Terms &amp; Conditions of employment, upon confirmation.</li> </ul>
<b>Leave Work Early for Pregnant Employees</b>	<ul style="list-style-type: none"> <li>Flexibility for female employees to leave work one hour earlier than the prescribed working hours.</li> <li>Eligible for all permanent employees including Contract Direct Hire under the common PETRONAS Terms &amp; Conditions of employment, who are 28 weeks/seven months into their pregnancy.</li> </ul>

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Recruitment

In line with our identified growth strategies, the year 2018 saw PCG’s recruitment strategy focusing on hiring specialist candidates in technical and commercial areas. We also focused our hiring activities by targeting more East Malaysian candidates to meet and support the State Government’s aspiration to create more employment for the local population.

As a result of these targeted recruitment efforts as well as business as usual recruitment activities, PCG was able to bring in 182 new employees into the company’s workforce. Additionally, the PCG recruitment team also enhanced recruitment efforts for our overseas operations, by incorporating local market practices and expertise into our procedures and tools as to source and attract the right talent.



PCG employees at one of our various employee engagement programmes

Employee Grievance Mechanisms

We have a comprehensive work process in handling grievance with the aim of reaching earliest agreement at the lowest level and maintaining good relations between both parties. During the year, only one staff grievance was recorded and had been resolved.

Employee Engagement Survey

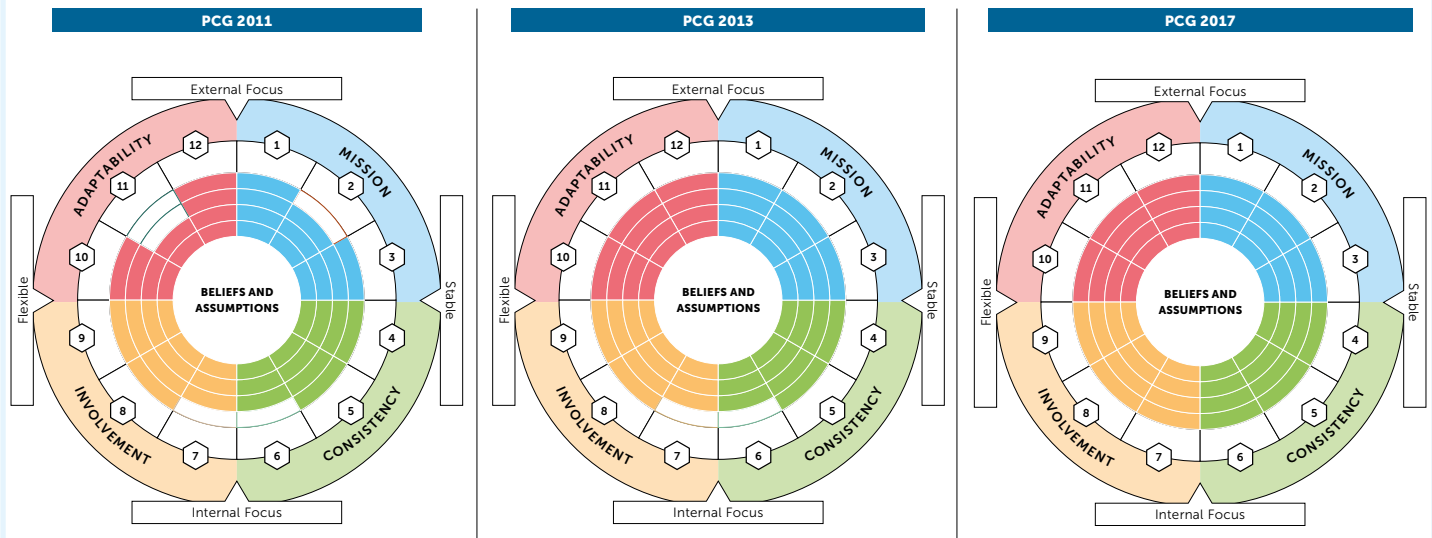
The PETRONAS Organisational Culture Survey (POCS) is based on the Denison Model and provides a clear picture of what the organisation needs to do in order to achieve higher performance. The survey measures four key drivers of high performance which are mission, adaptability, involvement and consistency.

Since 2011, POCS has been conducted once every two years in PETRONAS, with the exception of 2015 when PETRONAS Downstream Culture Track Survey was used instead. The last POCS was conducted in October 2017, with the next one scheduled for 2019. Through the years, PCG has recorded commendable progress within this area, and achieved a high participation rate of 96% in 2017.



## Social: Caring for Society

### PETRONAS Organisational Culture Survey (POCS)



Based from the POCS conducted in 2017, we scored highest in five areas among which staff acknowledge that they are well-informed on organisation activities, innovation and creativity are encouraged and rewarded, customer requirements are well understood as well as organised work relationship between individual job and organisational goal.

1 Strategic Direction & Intent	2 Goals & Objectives	3 Vision	4 Coordination & Intergration
5 Agreement	6 Core Values	7 Capability Development	8 Team Orientation
9 Empowerment	10 Creating Change	11 Customer Focus	12 Organisational Learning

### Anti-Corruption

We believe in maintaining the highest standards of ethics and integrity in all our business and workplace undertakings. Thus, we have zero tolerance for bribery or corruption. To ensure that our people uphold the highest level of professionalism and integrity throughout our organisation, all our employees receive training on CoBE. Since 2017, all our senior management have been required to declare their assets, thus ensuring and encouraging high ethical standards among our top management. It also demonstrates leadership by example and reinforces a culture of transparent and accountable governance within the Group. Our Whistleblowing Policy allows employees and members of the public to disclose any improper conduct through internal channels. This includes instances of fraud, bribery, abuse of power, conflict of interest, theft or embezzlement, misuse of company property and non-compliance with procedures. We have a number of easily accessible reporting channels in place such as e-mail, online submission through our website, in person to the Head of HR Business/Operating Units, using the Whistleblower Form, in writing to the PETRONAS Whistleblowing Committee and through our Whistleblowing hotline which is available during office hours from Monday to Friday. In so far as is reasonable, all whistleblowers are given the protection of confidentiality of identity.

## Our Way Forward

### Our Way Forward

Moving forward, our sustainable development journey is firmly focused on building a strong reputation as a recognised value creating company, to augment our competitive market presence in the Asia Pacific region. We will maintain our commitments to capture greater value within our Sustainability Focus Areas of Business Sustenance, Resource Efficiency and Social Responsibility.

Sustainability Focus Areas	Sustainability Objectives	Medium to Long-Term Focus
<b>BUSINESS SUSTENANCE</b>	<b>Operational Excellence</b>	<ul style="list-style-type: none"> <li>• Maintain a strong focus on elevating our safety culture, strengthening compliance and uplifting competencies towards attaining exemplary HSE Excellence</li> <li>• Sustain focus on process safety and effective management of change</li> <li>• Empower our people through OER2 to operate our plants safely, reliably and efficiently</li> <li>• Embark on digital journey i.e. HSE Advanced Analytics using existing big data, and an integrated suite to efficiently manage our physical assets</li> <li>• Ensure highest level of HSE and Operational Excellence upon commencement of PIC operations in 2019</li> </ul>
	<b>Commercial Excellence</b>	<ul style="list-style-type: none"> <li>• Enhance HSE land transportation to ensure safe delivery of our products to customers, while preserving the surrounding environment</li> <li>• Expand our market reach through PIC operational start-up in 2019</li> <li>• Continue working closely with our application technologists to explore and seize new value added business opportunities for our customers</li> <li>• Leverage on OER2 to better serve our customers</li> <li>• Leverage on customer relationship management tool of Sales Force Automation (SFA) to enhance our marketing and sales productivity, quicken response times and improve integrated marketing communications</li> </ul>
	<b>Growth Delivery Excellence</b>	<ul style="list-style-type: none"> <li>• Operationalise PIC petrochemical plants in the second half of 2019</li> <li>• Evaluate various investment opportunities in derivatives, specialty and bio-based chemicals through:               <ul style="list-style-type: none"> <li>- Extend Value Chain</li> <li>- Build Specialty Platform</li> <li>- Create Optionality for Growth</li> </ul> </li> </ul>

Sustainability Focus Areas	Sustainability Objectives	Medium to Long-Term Focus
<b>RESOURCE EFFICIENCY</b>	<b>Energy and Greenhouse Gases</b>	<ul style="list-style-type: none"> <li>Enhance energy management practices via PETRONAS Energy Practices Standard (PEPSTAR) methodology</li> <li>Achieve value improvement for production and efficiency through Strategic Energy Review (SER) at identified OPU's</li> <li>Conduct site-wide SER at Kertih complex following PETRONAS roadmap</li> </ul>
	<b>Natural Resource Use</b>	<ul style="list-style-type: none"> <li>Improve efficiencies in water consumption processes by reviewing operating plant water balance</li> </ul>
	<b>Waste Management</b>	<ul style="list-style-type: none"> <li>Implement, monitor and track further waste reduction initiatives</li> <li>Sustain Turnaround Environmental Preparedness initiative to identify opportunities for environmental footprint reduction</li> </ul>
<b>SOCIAL RESPONSIBILITY</b>	<b>Safe Operations</b>	<ul style="list-style-type: none"> <li>Improve conversations between management and employees on HSE and Process Safety</li> <li>Contractor HSE Mentorship Programme</li> <li>Initiate "Rakan HSE" (Friend of HSE) programme to develop HSE capabilities in operation and maintenance towards achieving generative HSE culture</li> <li>Establish Balance of Consequence (BoC) for manufacturing and land transportation</li> <li>Develop HSE modules for online computer based self-learning tools such as myLearning</li> <li>Enhance capabilities and competencies in Process Safety Management</li> </ul>
	<b>Product Stewardship</b>	<ul style="list-style-type: none"> <li>Compliance readiness to new emerging regulations imposed by specific end-user, application, countries and regions</li> <li>Enhance capabilities and competencies in product safety and compliances in specific applications like specialty chemicals, pharmaceuticals, automotive, personnel care and others</li> <li>Enhance product risk assessment to include environmental hazard risk and exposure</li> <li>Support PCG's New Plastics Economy initiatives through Life Cycle Assessment and circular economy perspective</li> <li>Execute full integration of Product Stewardship stage gate in New Product Development process flow</li> </ul>
	<b>Corporate Social Responsibility</b>	<ul style="list-style-type: none"> <li>Strengthen and amplify environmental awareness programmes in support of New Plastics Economy agenda</li> <li>Enhancement of education and social empowerment programme for selected and underprivileged communities</li> </ul>
	<b>Talent Management</b>	<ul style="list-style-type: none"> <li>Intensify sourcing for capable and 'Fit for Purpose' talent</li> <li>Intensify efforts in developing 'Fit for Purpose' talent</li> </ul>







[www.petronaschemicals.com](http://www.petronaschemicals.com)

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