

www.petronas.com



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50088 Kuala Lumpur, Malaysia

Petroleum Nasional Berhad (PETRONAS) • Sustainability Report 2017



MOVING FORWARD TOGETHER

Energy is an essential commodity for growth - a significant resource to fuel progress and contribute towards a better quality of life. In this equation, the access to an uninterrupted supply of energy, cleaner and more affordable, echoes aspirations of the current era where low-carbon economy has set a precedence for change.

Our evolution along with the world’s energy landscape calls for robust sustainability practices to address the needs and demands of the market, society and environment. It is an ongoing pursuit where we continuously solidify our governance and elevate our business practices. As we venture across various continents and foray diverse horizons to unlock value, contributing towards the wider progress of society resonates with our very own establishment for over four decades running.

The journey which began in 1974 has taken us far beyond Malaysia, driven by an unwavering commitment to maximise energy resources for the betterment of coming generations. Sustainability to us is about fulfilling the quest for advancement by making decisions that count today, for tomorrow’s prosperity.

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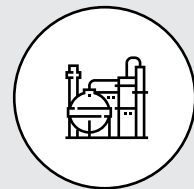


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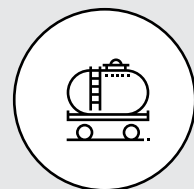
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PETRONAS AT A GLANCE

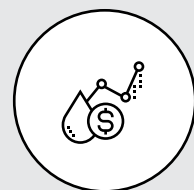
UPSTREAM



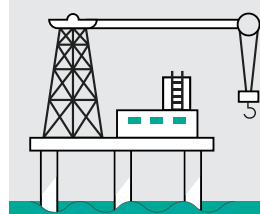
Total LNG sales volume of
30.72
million metric tonnes



443 BCE LNG loadable
delivered from the PETRONAS
LNG Complex in Bintulu, Sarawak

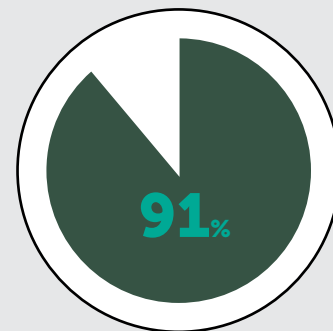


Average production
2,320 kboe/d

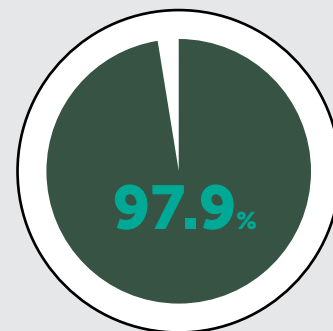


DOWNSTREAM

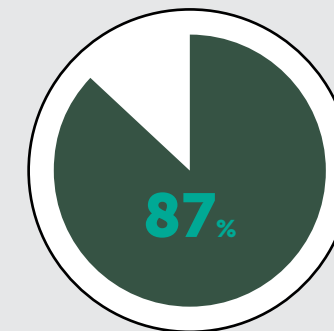
Plant Utilisation



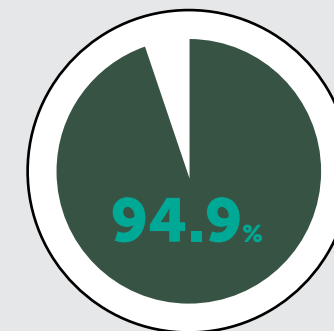
Reliability



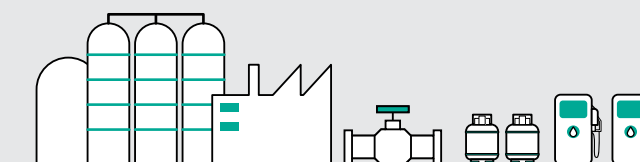
Pengerang Integrated
Complex Completion*



Overall Equipment
Effectiveness (OEE)



* Status as at March 2018



Downstream recorded
227 million manhours,
**60% higher compared
to last year**

PETRONAS' Retail
business recorded **the
highest unit margin in
5 years**, contributed by
higher fuel volume and
convenience income

Expanded availability of **the
new PETRONAS Dynamic
Diesel Euro 5** across Peninsular
Malaysia and Sarawak

PETRONAS Chemicals Fertiliser
Sabah Sdn Bhd (SAMUR) **began
commercial operations in May
2017**


**4-Time Consecutive World
Constructors' Champion** in
Formula One™



**>>Petroleum Nasional Berhad (PETRONAS)
is Malaysia's national oil company and is on
track towards becoming a leading oil and gas
multinational of choice, ranked amongst the
largest corporations in the world.**

We deliver energy efficiently and reliably, having built capabilities across every stage of the oil and gas value chain. We maximise the value of every molecule through our fully integrated business model. We continue to strengthen our portfolio of conventional and unconventional resources, broaden our offering of diverse petrochemical products and maintain our track record of successful project delivery.

As we progress towards a low-carbon energy future, we continue to leverage technology, technical capabilities and our diverse, resilient and competent workforce to sustainably deliver energy to the world.

 **Note:** Please refer to the PETRONAS Group Annual Report 2017 for more information, accessible at www.petronas.com



PETRONAS AROUND

NORTH AMERICA

UPSTREAM • **Canada** – (Unconventional) Development & Production
• **Mexico** – Exploration

DOWNSTREAM • **Canada** – Lubricants
• **Guatemala** – Lubricants
• **Mexico** – Lubricants • **Honduras** – Lubricants
• **El Salvador** – Lubricants • **Costa Rica** – Lubricants
• **Dominican Republic** – Lubricants
• **United States of America** – Petrochemicals, Lubricants



LATIN AMERICA

UPSTREAM • **Suriname** – Exploration • **Argentina** – (Unconventional) Development & Exploration

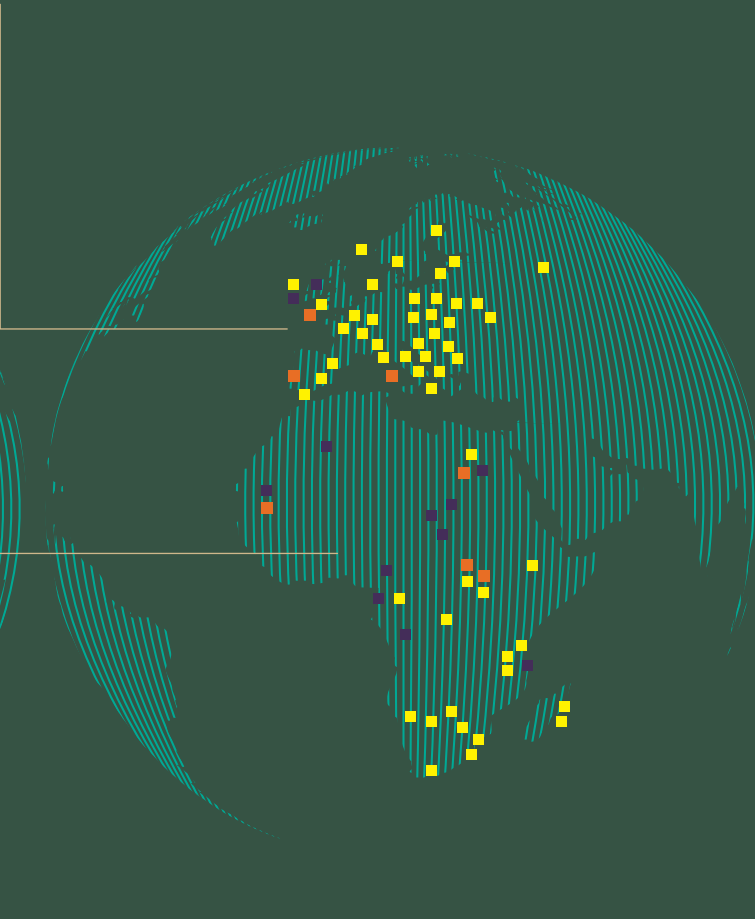
DOWNSTREAM • **Argentina** – Lubricants
• **Bolivia** – Lubricants • **Brazil** – Lubricants
• **Chile** – Lubricants • **Colombia** – Lubricants
• **Ecuador** – Lubricants • **Guyana** – Lubricants
• **Paraguay** – Lubricants • **Peru** – Lubricants
• **Suriname** – Lubricants • **Uruguay** – Lubricants

EUROPE

UPSTREAM • **Ireland** – Production • **United Kingdom** – LNG & Gas Trading, Gas Storage

DOWNSTREAM • **Austria** – Lubricants • **Belgium** – Lubricants • **Bulgaria** – Lubricants
• **Czech Republic** – Lubricants • **Denmark** – Lubricants • **Finland** – Lubricants
• **France** – Lubricants • **Germany** – Lubricants • **Greece** – Lubricants • **Hungary** – Lubricants
• **Italy** – Lubricants • **Moldova** – Lubricants • **Norway** – Lubricants • **Poland** – Lubricants
• **Portugal** – Lubricants • **Romania** – Lubricants • **Russia** – Lubricants • **Slovakia** – Lubricants
• **Slovenia** – Lubricants • **Spain** – Lubricants • **Sweden** – Lubricants
• **Switzerland** – Lubricants • **United Kingdom** – Lubricants • **Netherlands** – Lubricants

PROJECT DELIVERY & TECHNOLOGY • **Italy** • **Spain** • **United Kingdom**



AFRICA

UPSTREAM • **Algeria** – Production • **Angola** – Exploration • **Chad** – Production
• **Egypt** – Development, Production & LNG • **Gabon** – Exploration
• **Republic of Sudan** – Development & Production
• **Republic of South Sudan** – Development & Production

DOWNSTREAM • **Cote D'Ivoire** – Lubricants • **Algeria** – Lubricants • **Angola** – Lubricants
• **Botswana** – Retail, Lubricants • **Burundi** – Lubricants • **Cameroon** – Lubricants
• **Democratic Republic of the Congo** – Retail, Lubricants • **Gabon** – Retail, Lubricants
• **Ghana** – Retail, Lubricants • **Kenya** – Retail • **Lesotho** – Retail, Lubricants
• **Lesotho** – Retail • **Malawi** – Retail, Lubricants • **Mali** – Lubricants • **Mauritania** – Lubricants
• **Mauritius** – Retail • **Morocco** – Lubricants • **Mozambique** – Retail, Lubricants
• **Namibia** – Retail, Lubricants • **Reunion** – Retail, Lubricants • **Rwanda** – Retail, Lubricants
• **South Africa** – Refinery, Retail, Lubricants • **Swaziland** – Retail
• **Tanzania** – Retail, Lubricants • **Togo** – Lubricants • **Tunisia** – Lubricants
• **Zambia** – Retail, Lubricants • **Zimbabwe** – Retail

¹In Nov 2017, Vivo Energy agreed to enter into a share transaction with Engen

PROJECT DELIVERY & TECHNOLOGY • **Egypt** • **Mauritania** • **Republic of South Sudan**
• **Republic of Sudan**

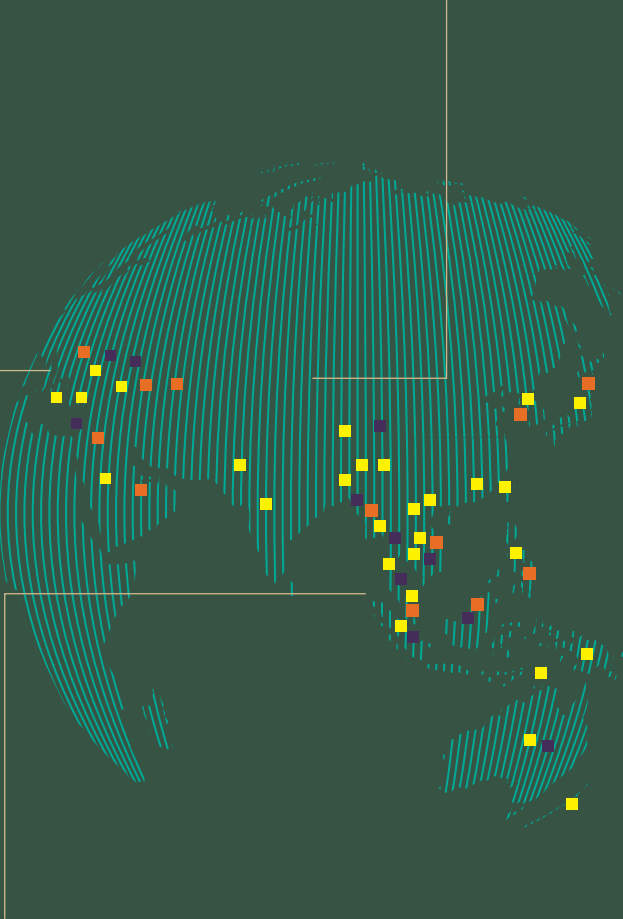
THE WORLD

MIDDLE EAST

UPSTREAM • **Iraq** – Development & Production

DOWNSTREAM • **Egypt** – Lubricants
• **Iraq** – Lubricants • **Jordan** – Lubricants
• **Saudi Arabia** – Lubricants
• **United Arab Emirates** – Lubricants
• **Iran** – Lubricants

PROJECT DELIVERY & TECHNOLOGY
• **Iraq** • **United Arab Emirates**



CENTRAL ASIA

UPSTREAM • **Azerbaijan** – Development & Production • **Turkmenistan** – Development & Production

DOWNSTREAM • **Turkey** – Lubricants
• **Turkey** – Lubricants

PROJECT DELIVERY & TECHNOLOGY
• **Azerbaijan** • **Turkmenistan**

ASIA PACIFIC

UPSTREAM • **Australia** – Exploration, Development, Production & LNG
• **Brunei** – Exploration & Development • **Indonesia** – Exploration, Development & Production
• **Japan** – LNG Marketing • **Malaysia** – Exploration, Development, Production & LNG
• **Malaysia–Thailand Joint Development Area** – Exploration, Development & Production
• **Myanmar** – Exploration, Development & Production • **Vietnam** – Production

DOWNSTREAM • **Australia** – Petrochemicals, Lubricants • **Bangladesh** – Lubricants
• **Cambodia** – Lubricants • **China** – Petrochemicals, Lubricants
• **India** – Petrochemicals, Lubricants • **Indonesia** – Petrochemicals, Lubricants
• **Japan** – Petrochemicals, Lubricants • **Malaysia** – Petrochemicals, Retail, Refinery, Lubricants
• **Myanmar** – Lubricants • **Nepal** – Lubricants • **New Zealand** – Petrochemicals, Lubricants
• **Pakistan** – Lubricants • **Philippines** – Petrochemicals • **Sri Lanka** – Lubricants
• **Singapore** – Petrochemicals, Lubricants • **South Korea** – Petrochemicals
• **Taiwan** – Petrochemicals • **Thailand** – Petrochemicals, Lubricants
• **Vietnam** – Petrochemicals, Lubricants

PROJECT DELIVERY & TECHNOLOGY • **Brunei** • **China** • **India** • **Indonesia** • **Japan**
• **Malaysia** • **Myanmar** • **Philippines** • **South Korea** • **Vietnam**

OUR WORKFORCE



PETRONAS Employees by Region

Africa	8.2%
Asia	85.1%
Australia & New Zealand	0.1%
Commonwealth of Independent States	1.3%
Europe	2.3%
Middle East	1.8%
North & South America	1.2%

Total Employees **49,911**

Within Malaysia 82.0%

Outside Malaysia 18.0%

Legend

→ UPSTREAM

→ DOWNSTREAM

→ PROJECT DELIVERY & TECHNOLOGY

OUR PROFILE

VISION

A LEADING OIL AND GAS MULTINATIONAL OF CHOICE

MISSION

We are a business entity	Oil and gas is our core business	We add value to this resource	We contribute to the wellbeing of society
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SHARED VALUES

LOYALTY	INTEGRITY	PROFESSIONALISM	COHESIVENESS
Loyal to corporation	Honest and upright	Strive for excellence	United, trust and respect for each other

Petroleum Nasional Berhad (PETRONAS) is Malaysia's national oil company and is on track towards becoming a leading oil and gas multinational of choice, ranked amongst the largest corporations on FORTUNE Global 500®.

Since 1974, we have built our capabilities across every stage of the oil and gas value chain. We maximise the value of every molecule through our integrated business model. Our portfolio grows with conventional and unconventional resources; broadens with diverse fuel, lubricant and petrochemical products; and strengthens with a successful project delivery track record.

Our technology is our differentiator, our people are our strength and our partners are our growth.

The world's energy needs are our fuel to deliver energy efficiently, reliably and sustainably.

PETRONAS' FIVE-YEAR KEY FINANCIAL INDICATORS

In RM billion



Financial Ratios	FY2013	FY2014	FY2015*	FY2016*	FY2017
PAT Margin	20.7%	14.5%	8.8%	12.2%	20.3%
Return on Total Assets (ROTA)	17.5%	14.1%	5.8%	5.4%	10.7%
Return on Average Capital Employed (ROACE)	17.4%	11.9%	5.1%	5.4%	9.8%
Debt/Assets Ratio	0.08x	0.07x	0.10x	0.11x	0.11x
Gearing Ratio	14.3%	12.6%	16.0%	17.4%	16.1%
Dividend Payout Ratio	54.1%	53.6%	70.2%	>100%	93.0%

* Certain financial information and its corresponding financial ratios have been restated due to the change in accounting policies with respect to revenue reporting and inventory valuation for gas trading activities.

LETTER FROM THE PRESIDENT AND GROUP CHIEF EXECUTIVE OFFICER

>> OUR STAND IS CLEAR AS WE TRANSITION TOWARDS A SUSTAINABLE FUTURE. WE ARE COMMITTED TO SAFELY AND RELIABLY MEET OUR CUSTOMERS' NEEDS FOR ENERGY AMIDST DISRUPTIONS.



TAN SRI WAN ZULKIFLEE WAN ARIFFIN
>> President and Group Chief Executive Officer

	Introduction	Environment	Social	Governance	Feature Stories	Appendix
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The external landscape in 2017 was challenging, characterised by unprecedented volatilities and cyclical uncertainties surrounding the price of commodities. Whilst our agility was tested, a refined business strategy integrating a stronger focus on sustainability propelled PETRONAS towards greater progress. This Report summarises our strategic priorities in delivering PETRONAS’ sustainability aspirations, drawing upon the successes and learning in 2017.

Today, PETRONAS is sturdier to weather the uncertainties of time. The relentless commitment of our workforce was instrumental in strengthening our resilience, what more the support of their families. Thank you all for being with PETRONAS, as we prospered towards our wider socio-economic and environmental aspirations.

Our stand is clear as we transition towards a sustainable future. We are committed to safely and reliably meet our customers’ needs for energy amid disruptions. As market forces change, generating lasting value creation in realising our Corporate Sustainability Framework is vital to us.

Low-Carbon Economy

PETRONAS is committed to managing climate change across our business value chain. We recorded greenhouse gas (GHG) reductions of over eight million tonnes of carbon dioxide equivalent, cumulatively over a five-year period between 2013 and 2017. Taking on from which, we are committed to a further cutback in GHG emissions below business as usual, partly supporting our home country’s ambition towards the Paris Agreement.

Accelerating towards a low-carbon economy, our Carbon Commitments were enhanced to draw on opportunities such as Renewable Energy, including Carbon Pricing and Offset. Collectively, these complement our existing measures on attaining zero continuous venting and flaring, where economically feasible. Simultaneously, amplifying our strong position in the global liquefied natural gas sector, in addition to which, we advocate gas as a cleaner choice of energy. Investments into innovative technological solutions further fortified our competitive edge in monetising gas fields containing high levels of carbon dioxide.

Works are presently ongoing towards establishing a New Energy Unit, tasked to unfold investment opportunities in the area of renewables. Concurrently, to explore the possibilities of designing innovative energy solutions. In essence, these will enhance the agility of our current energy portfolio.

Safe and Sound

Safeguarding people, the environment, and communities residing in close proximity to our operational vicinity is a top priority. We recorded better safety performance compared to 2016, especially in Fatal Accident Rate and Loss Time Injury Frequency, marking a 74 per cent and 35 per cent improvement, respectively. A heavier focus on Loss of Primary Containment management was encouraging as cited by a sharp decline in the number of process safety related incidents across the Group. Whilst it was a year of achievements, we lost the lives of four of our contractors which is not acceptable to us. Promptly, effectiveness of our safety systems, mechanisms and procedures in the areas of land transportation and project HSSE were thoroughly scrutinised.

A stronger emphasis on safety excellence solidified HSSE leadership across all levels. Safety to us is a shared responsibility, amongst our staff and contractors, making every person accountable in sustaining a culture of zero harm, at all times. The goal is forthright, and that is for every person serving at PETRONAS to go home *safe, healthy and motivated*.

The goal is forthright, and that is for every person serving at PETRONAS going home safe, healthy and motivated.

	Introduction	Environment	Social	Governance	Feature Stories	Appendix
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Social Value Creation

Nurturing an empowered and self-driven workforce is premised upon our philosophy of life-long learning. In 2017, we continued to invest into developing the right competencies of our human capital. The PETRONAS 3P (People, Performance and Passion) Leadership Model was a holistic approach formalised to empower and grow our people amidst a fluid business environment.

Establishment of the PETRONAS Contractors Code of Conduct on Human Rights (CoCHR) in 2017 magnified the reach of our best practices across our business value chain. As we deepen our foothold across the global energy sector, management of social risks, essentially, respect for human rights is a prerequisite.

We are also mindful of our stakeholders’ mutual aspirations for progress. In 2017, we channelled close to RM230 million in corporate social investments. Our multi-dimensional investment strategy created jobs, supported local capacity building and promoted a myriad of community development causes. I am happy that the people of PETRONAS, our ambassadors, collectively contributed their time and energy in reaching out to the local communities in areas of our operations.

The Road Ahead

The global urgency to shift into an era defined by lower emissions and cheaper energy is fast-paced. This is thus spurring investment into state-of-the art energy infrastructure and next-generation technologies. In a nutshell, the conventional energy sector is embracing progressive solutions to remain viable. The continual and systematic sharpening of our competitive edge is imperative to remain a partner of choice. Decisions we make going forward will be key to address the changing dynamics of our world, whilst staying conscious of our stakeholders and customers’ evolving expectations.

To this end, I would like to share that PETRONAS is presently working alongside the Malaysian Government to define a fit-for-purpose energy model for the country, including policies to facilitate its realisation.

I believe by capitalising on our profound business acumen, leadership and experience, PETRONAS is driven to maximise value creation despite the turbulences ahead. We are geared to do all it takes to excel, whilst subscribing to our Shared Values and Cultural Beliefs as we shape the pathway for PETRONAS, our industry and the global energy sector. Parallel to our stand on voluntary reporting, we will continue to communicate our progress on driving sustainability in an open and transparent manner.

Thank you.

I am happy that the people of PETRONAS, our ambassadors, collectively contributed their time and energy in reaching out to the local communities in areas of our operations.

MATERIAL FACTORS

The content of our Sustainability Report is guided by an internal materiality assessment process to sufficiently address the interest of our stakeholders alongside PETRONAS’ growth aspirations. The material factors derived from an annual materiality assessment ensure the information provided is timely, meaningful and comparable.

A total of 10 material factors were clustered under three key sections, namely, Environment, Social and Governance (ESG), with each comprising a subset of specific focus areas. The material factors are largely constant from year to year relative to the larger ESG landscape, unless otherwise stated.

Disclosure on Management Approach was defined for each material factor, supported by performance data and insights on specific initiatives undertaken in the year. The information provided is tailored to the requirements of applicable sustainability reporting guidelines.

Section	Material Factor	Perspective	Focus Area	Boundary	Relevance to the SDGs	Page(s)
Environment	Climate Change	<ul style="list-style-type: none">Supporting a low-carbon economy	<ul style="list-style-type: none">GHG EmissionsEnergy EfficiencyFlaring and VentingRenewables	Groupwide	Yes	26-31
	Environmental Management	<ul style="list-style-type: none">Implementing measures to protect the environmentEnsuring resource efficiency	<ul style="list-style-type: none">Freshwater WithdrawalDischargers to WaterSpillsAir EmissionsWaste ManagementBiodiversity and Ecosystem ServicesDecommissioning	Groupwide	Yes	32-37
Social	Safety	<ul style="list-style-type: none">Sustaining operational excellence and integrity	<ul style="list-style-type: none">Occupational SafetyProcess SafetyEmergency Preparedness and Crisis Management	Groupwide	Yes	40-43
	Health, Wellness and Exposure Management	<ul style="list-style-type: none">Achieving optimum health levelsSafe handling of exposures at the workplace	<ul style="list-style-type: none">Healthy LifestyleFatigue ManagementContractor HealthChemical ManagementErgonomicsNoise Management	Groupwide	Yes	44-47

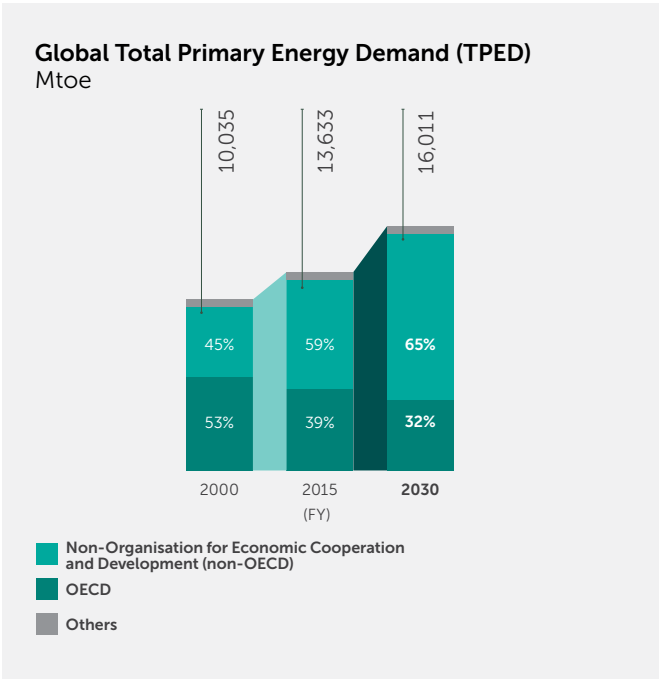
Note: SDGs stand for Sustainable Development Goals

Section	Material Factor	Perspective	Focus Area	Boundary	Relevance to the SDGs	Page(s)
	Product Stewardship	<ul style="list-style-type: none">Producing safe and reliable products that are environmentally-friendly	<ul style="list-style-type: none">Product Risk AssessmentsProduct Safety Data SheetsProduct Communication and Compliance	Downstream	Yes	48-50
	Security	<ul style="list-style-type: none">Ensuring a safe workplace	<ul style="list-style-type: none">Security ManagementMaritime SecurityCybersecurity	Groupwide	Yes	51-52
	Human Rights	<ul style="list-style-type: none">Grievance management and due diligence	<ul style="list-style-type: none">Human RightsTraining on Human RightsSocial Risk Assessments	Groupwide	Yes	53-54
	Human Capital	<ul style="list-style-type: none">Nurturing a diverse and talented workforce	<ul style="list-style-type: none">Talents as InvestorsHolistic Capability DevelopmentDiversity and InclusionCollective Bargaining and Freedom of AssociationWorkforce Engagement	Groupwide	Yes	55-56
	Social Responsibility	<ul style="list-style-type: none">Creating lasting value creation and progress	<ul style="list-style-type: none">Corporate Social InvestmentCommunity EngagementLocal ProcurementLocal Talent	Groupwide	Yes	57-63
Governance	Business Ethics and Compliance	<ul style="list-style-type: none">Promoting a culture of compliance	<ul style="list-style-type: none">Code of Conduct and Business EthicsAnti Bribery and Corruption ManualWhistleblowing Policy and Procedures	Groupwide	Yes	66-67

Note: SDGs stand for Sustainable Development Goals

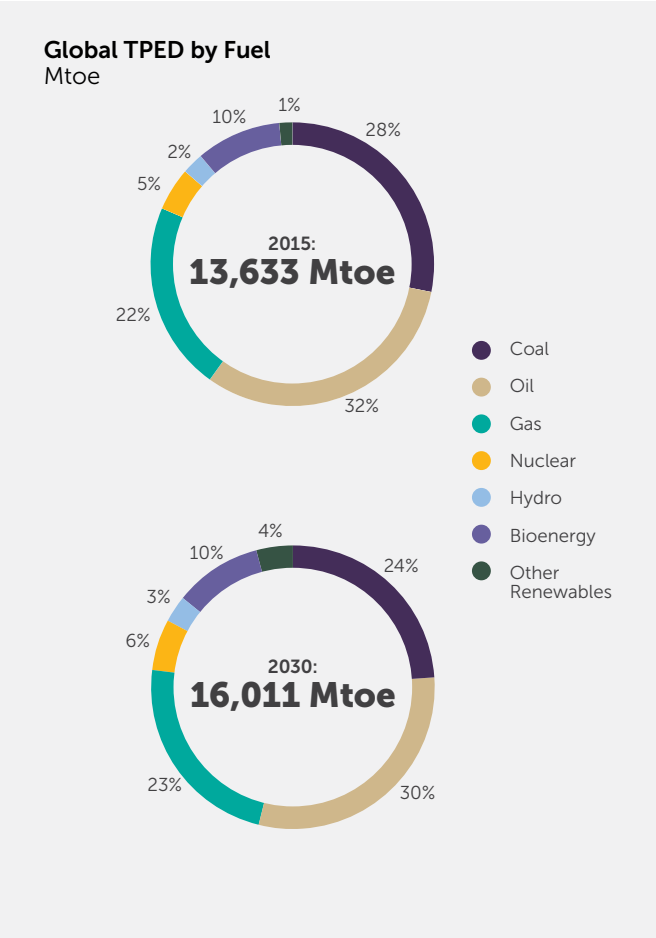
ENERGY TRANSITION

Global energy demand will continue to grow by 18 per cent to 2030, driven by a rising population and sustained economic momentum in emerging markets. China, India, South East Asia, Africa, Latin America and the Middle East will drive this growth, increasing the non-OECD share of global total primary energy demand (TPED) from 59 to 65 per cent. This trend is reversed in the OECD nations, where energy efficiency, digitalisation and the shift from manufacturing to services primarily in North America, Europe, Japan and others will collectively see a decline in TPED from 39 to 32 per cent by 2030.



This growth sees an ongoing emphasis on providing access to clean, reliable and affordable energy for driving economic progress, especially in less-developed nations. This is to fundamentally address the *energy trilemma* – the challenge of balancing energy security, energy affordability and environmental sustainability.

Technological development, regulatory support and business innovation have enabled a revolutionary leap in bringing down the cost of renewable energy in recent years. Whilst the pace of growth has been fast, the overall volume of renewable energy including hydro, bioenergy, solar, wind and others remains relatively small at 13 per cent in 2015. Presently, coal, oil and natural gas make up 82 per cent of the world’s primary energy mix, and will continue to be dominant up to 2030. The overall share of renewables will increase from 13 to 17 per cent despite tremendous growth in solar photovoltaic and wind power.



Source: IEA World Energy Outlook 2017

The challenge of increasing the share of renewables in the global primary energy mix lies in the intermittent nature of solar and wind power generation. Additionally, the efficiency of most solar panels in converting sunlight into power range from 17 to 18 per cent, compared to a combined-cycle gas turbine which exceeds 50 per cent efficiency today. Natural gas use is thus expected to increase in power generation. Gas-fired power plants can be turned on and off much more quickly than other power plants to help address the challenge of seasonal and daily output variability of wind and solar energy. Natural gas also emits about 50 per cent less carbon dioxide (CO₂) per kilowatt-hour compared to coal, prompting a switch away from coal and decreasing its share in the primary energy mix.

Meanwhile, global oil demand will grow by another 10 per cent between 2015 and 2030, although its share decreases from 32 to 30 per cent in the primary energy mix. Fuel efficiency policies and the growing fleet of electric passenger vehicles will have a downward pressure on demand, but on the balance, heavy vehicles, planes and ships continue to rely on the unrivalled energy density of refined oil products. The growth in oil and gas consumption will also come from the petrochemical sector as the rising population sees more demand for plastics, detergents, solvents and many other derivatives used as building blocks for everyday consumables.

Whilst fossil fuel will remain core to the global energy mix, we promote natural gas and LNG as lower carbon fuel. Today, natural gas is Malaysia’s largest source of energy, providing nearly half of the fuel required for power generation and a third of the industrial sector’s energy needs. It also forms the

backbone of Malaysia’s petrochemical industry. To ensure a sustainable supply, we work with the Government to create a more competitive gas market, supported by ongoing gas advocacy efforts. A competitive gas market will also result in better prices and service for the end-user.

Supplying the world’s energy needs is an ongoing challenge requiring ingenuity in solutions, including technological developments. On the supply side, solutions like energy storage, hydrogen fuel cells, next-generation nuclear systems and biofuels are being developed whilst on the demand side, innovations to energy systems and business models continue to optimise energy production, delivery and use.

Over the years, PETRONAS has invested in technology development to maximise hydrocarbon resources whilst reducing environmental footprint, for example through CO₂ management. There are also investments made into emerging technologies through collaborations with academia and corporations. We embarked on a digital transformation in 2016 to deliver new value and change the way we work through advanced analytics and machine learning. In 2017, greater emphasis was placed on non-oil and gas solutions with the establishment of our PETRONAS New Energy Business.

We will continue to leverage our expertise in the sustainable production of oil and gas to provide an uninterrupted supply of energy, contributing towards a better quality of life. At the same time, we are investing in cleaner energy solutions to accelerate the energy transition towards a low carbon economy.

CLIMATE CHALLENGE

The energy sector’s fundamentals are shifting following impending evolvments in the areas below, arising from a stronger emphasis on climate change:

- Financial investments
- Stakeholder confidence
- Climate legislation
- Extreme weather
- Disruptive technology

We are guided by the PETRONAS Climate Change Framework to identify, assess and prioritise risks pertinent to our business operations. Identified high risk elements are subsequently integrated into the PETRONAS Enterprise Risk Management profile for Groupwide implementation.

Paving the Path Towards a Low-Carbon Economy



For more information on our Climate Change initiatives, please refer to pages 26 to 31 of this Report.