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#### Contents

#### Introduction from regional president

Recent developments and prospects

#### BP's global business

4 An overview of BP

#### BP Angola in context

- BP around the world
- Our stakeholders and our reporting
- 10 BP Angola in figures

#### How we operate

- BP Angola's strategy
- Governance and management systems
- Our operations
- 22 Our people

#### Safety, health and security

- 25 Safety management and performance
- 27 Health and wellbeing

#### Managing environmental impact

- 29 Climate change
- 30 Environmental management
- 31 Environmental performance

#### Maximizing value to society

- 34 Our socio-economic contribution
- Supporting education
- Promoting enterprise
- Capability development Our social investment projects
- About this report
- 40 Cautionary statement

## Introduction from BP Angola's regional president



We aim to build a safe. reliable and competitive business in Angola that benefits the country and our shareholders, 2016 was a very challenging year and we delivered solid results in all aspects of our performance. This report describes our activities and the progress across our business - we welcome your feedback on the report and on our business activities in Angola.

#### Our safety and environmental performance

Personal and process safety is at the heart of what we do and who we are, and we remain very focused on our goal of no accidents, no harm to people and no damage to the environment. We have reduced the number of loss of primary containment incidents; our recordable injury frequency rate improved; and we increased the number and quality of safety conversations across the business

However, we still had some incidents that caused concern during the year. These included events in which a total of three people suffered minor injuries which required medical treatment. It reminds us that we must always remain vigilant when it comes to safety. Our approach is to care for each other, speak up and stop the job if something is not right.

We undertook a major oil spill response exercise in Angola with 135 participants, including a cross-section of BP staff. government representatives and industry colleagues. It is our duty to run a safe and reliable business, but also to be prepared in case of emergency. This exercise gives us assurance that our people are ready to respond and our systems, process and resources are robust

#### Our people

Building a local organization with global capability and maintaining a motivated and engaged team are two of our key people priorities. The percentage of Angolan nationals working in our Angola organization has increased from 79% at the end of 2015 to 86% at the end of 2016, and we have increased the number of Angolan nationals in senior leader positions from 12 to 17. Our internal staff survey scores saw an upturn in overall engagement to 79%, from 75% in 2015 and 74% in 2014. In recognition of the challenging external economic environment, we took several steps to support our employees in their lives outside the office.

#### Competitiveness

Competitiveness is essential to build a long term sustainable business; it requires continuous improvement in all we do. In 2016, we achieved an operating efficiency of 93% at Greater Plutonio and 94% at PSVM, and we are working hard to ensure cost effectiveness across the business. We reported net average daily production of 223,000 barrels of oil equivalent, which was above our target. Towards the end of 2016, we reviewed our operating model and undertook a staff reorganization in the first guarter of 2017, which resulted in redundancies. We provided support and assistance to all those affected throughout the process. Operational performance was robust; we completed the Greater Plutonio phase 3 project six

months ahead of schedule and 27% under budget. We carried out the drilling campaign for the PSVM phase 2 programmes safely and successfully. We completed the first BP operated subsea well intervention campaign ahead of schedule.

#### Supporting the community

As part of our social investment we led a public health campaign in response to the outbreak of yellow fever, malaria and other water-borne diseases to provide equipment and medical supplies to local hospitals. supported by funds raised from our employees and by BP. We are delighted to report that our corporate social responsibility work has been recognized through the Excellence Civitas Awards for the best company in the energy sector and best company overall in Angola.

#### Looking to the future

The business environment was difficult in 2016 and we expect this to continue for the foreseeable future. We have entered an era where the availability of energy is growing and diversifying, whilst the growth in demand is more modest - competitiveness will be key in this environment. We remain focused on managing costs, finding solutions to simplify how we work and delivering our business plan to 2020. We have two high-quality assets in Greater Plutonio and PSVM which continue to perform extremely well, delivering more than 300mbd gross production, and we are developing plans to extend their production into the future. We are also testing the viability of various options in blocks 18, 31 and beyond. Despite the challenging operating context, we have many reasons to be optimistic and confident about the future. As the newly appointed regional president for BP Angola, I am proud to be part of that future.



BP Angola regional president July 2017

From the deep sea to the desert, from rigs to retail, we deliver energy products and services to people around the world. We provide customers with fuel for transport. energy for heat and light, lubricants to keep engines moving and the petrochemicals products used to make everyday items as diverse as paints, clothes and packaging.

Our diverse portfolio is balanced across businesses, resource types and geographies. Having upstream and downstream businesses, along with well-established trading capabilities, helps to mitigate the impact of lower oil and gas prices. Our geographic reach gives us access to growing markets and new resources, as well as diversifying exposure to geopolitical events.

#### Our role in society

The energy we produce helps to support economic growth and improve quality of life for millions of people. We strive to be a world-class operator, a responsible corporate citizen and a good employer.

We believe that the societies and communities we work in should benefit from our presence. In supplying energy we contribute to economies around the world by employing local staff, helping to develop national and local suppliers, and through the taxes we pay to governments. Additionally, we aim to create meaningful and sustainable impacts in those communities through our social investments.

\$11.2bn

employee wages and benefits

\$2.2bn

taxes paid to governments comprising income and production taxes

\$7.5bn

total dividends distributed to BP shareholders

#### Enabling our business model

#### Safe and reliable operations

We strive to create and maintain a safe operating culture where safety is front and centre. This is not only safer for people and the environment - it also improves the reliability of our assets.

See Safety, health and security on p24.

#### Talented people

We work to attract, motivate, develop and retain the best talent the world offers - our performance and ability to thrive globally depends on it.

See Our people on p22.

Developing and extracting oil and gas

New technologies are enabling us to produce energy safely and more efficiently. We selectively research and invest in areas with the potential to add greatest value to our business now and in the future.

See Our operations on p17.

#### Partnerships and collaboration

We aim to build enduring relationships with governments, customers, partners, suppliers and communities in the countries where

See Maximizing value to society on p33.

#### Governance and oversight

Our risk management systems and policy provide a consistent and clear framework for managing and reporting risks. The board regularly reviews how we identify, evaluate and manage risks.

See How we manage risk on p15.

## Finding oil and gas Transporting and trading Manufacturing 00 Generating renewable energy

#### Creating value

#### Finding oil and gas

New access allows us to renew our portfolio, discover additional resources and replenish our development options. We focus our exploration activities in the areas that are competitive in the portfolio. We develop and use technology to reduce costs and risks.

#### Developing and extracting oil and gas

We create value by seeking to progress hydrocarbon resources and turn them into proved reserves, or sell them on if they do not fit with our strategic priorities. We develop and produce the resources that meet our return threshold, which we then sell to the market or distribute to our downstream facilities.

Our upstream pipeline of future projects gives us choice about which we pursue.

We also seek to grow or extend the life of existing fields and are using new business models to increase value. Our US Lower 48 onshore business and Aker BP in Norway are two examples of how we've used innovative new business models in response to the competitive environment.

#### Transporting and trading

We move oil and gas through pipelines and by ship, truck and rail. We also trade a variety of products including oil, natural gas, liquefied natural gas, power and currencies. Our traders complete around 550,000 transactions and serve more than 12,000 customers across some 140 countries in a year.

We use our market intelligence to analyse supply and demand for commodities across our global network. This helps us deliver what the market needs, when it needs it, identify the best markets for BP's crude oil, source optimal raw materials for our refineries and provide competitive supply for our marketing businesses.

#### Manufacturing and marketing fuels and products

We produce petroleum products at our refineries and supply distinctive fuel and convenience retail services to consumers. Our advantaged infrastructure, logistics network and key partnerships help us to have differentiated businesses and deliver compelling customer offers.

Our lubricants business has premium brands and access to growth markets. It also leverages technology and customer relationships, all of which we believe gives us competitive advantage. We serve automotive, industrial, marine and energy markets across the world.

And in petrochemicals our proprietary technology solutions deliver leading cost positions compared to our competitors. In addition to our own petrochemicals plants, we work with partners and license our technology to third parties.

#### Generating renewable energy

We have the largest operated renewables business among our oil and gas peers. We operate a biofuels business in Brazil, using one of the world's most sustainable and advantaged feedstocks to produce low carbon ethanol and low carbon power.

We provide renewable power through our significant interests in onshore wind energy in the US. We develop and deploy technology in our wind business to drive efficiency and capacity

More information

How we operate

BP in Angola Sustainability Report 2016 BP in Angola Sustainability Report 2016

## BP around the world

We are a global energy company with wide reach across the world's energy system. We have operations in Europe, North and South America, Australasia, Asia and Africa.

Scale

18,000 retail sites

6,000+ marine voyages completed by BP-operated and

chartered vessels

countries

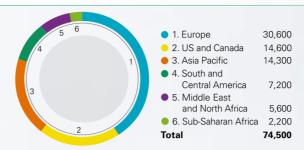
million barrels of oil

equivalent per day

\$187.3bn

economic value generated

#### BP employees by region



#### BP employees by segment



Caption: The PSVM Floating Production Storage

and Offloading vessel, offshore Angola.



Highlights of some of our activities in 2016.

Entered into a strategic partnership with Fulcrum BioEnergy – a company that produces sustainable jet fuel from household waste.

Announced plans to optimize wind business - BP is one of the top producers of wind energy in the US.

due diligence process for using spot-chartered vessels in the North Sea.

Enhanced our human rights brand.

Launched our low carbon

and carbon neutral PTA

Reached production of three billion barrels of oil at our Rumaila joint venture. For local community

Tested technology that aims to enhance safety on our offshore platforms in the Gulf of Mexico.

> Achieved a 100% rating for sustainability performance at one of our biofuels mills in Brazil.

Acquired interests in gas exploration blocks in offshore Mauritania and Senegal.

Started up the In Salah Southern Fields gas project in central Algeria.

Conducted a major oil spill response exercise in Angola with government and others.

Agreed to extend the Khazzan gas field, with production expected to meet 40% of Oman's domestic gas supply.

Increased gas recovery from offshore operations in the Caspian Sea.

Signed the largest deal yet in China's emerging carbon trading market.

Launched a diesel lubricant in India engine oil as its

Gained approval to expand

our Tangguh LNG plant, building on a decade-long commitment to the local community.

Piloted pre-contract audits of potential suppliers on labour rights in Malaysia.

## BP Angola in context

Working in Angola, a developing country with a heritage of conflict, creates an operating context for business which is demanding, but where opportunities also exist.



Caption: The Marginal in the heart of Luanda.

#### A challenging environment

The decline in the international crude oil price since mid-2014 poses challenges for the entire petroleum industry. It has far-reaching impacts on Angola, a country which is greatly dependent on oil and gas revenues.

As the second-largest oil producer in Africa after Nigeria, Angola's oil sector continues to underpin the country's reconstruction and is the major source of export earnings and foreign investment. Reliance on oil means that Angola is heavily exposed to fluctuations in the oil price. To address this challenge, the government has been seeking growth in the non-oil sector, with a public sector investment programme that attempts to diversify the economy, complete reconstruction and address key infrastructure gaps.

BP recognizes the risk to the country of overdependence on the oil and gas sector, and the need to manage the high expectations that stakeholders have of our industry. While our key contribution lies in maximizing oil and gas production, we play a supporting role in helping to develop the national economy.

See page 36 for how BP Angola promotes enterprise

#### **Economic capacity**

The challenging economic climate has important consequences for Angola's ability to develop. According to the International Monetary Fund, output in real terms has more than doubled in Angola over the past decade and output per capita has increased by more than half. Yet the drop in oil revenues, leading to large declines in fiscal revenues and exports, is resulting in economic slowdown and rising inflation. This is a major driver behind the government's efforts to promote economic diversification – a long-term process but one that has already had an effect, such as the reduction of certain agricultural imports.

Further development of Angola's institutions is needed to tackle a wide range of social challenges, such as poverty alleviation and health. Malaria remains a significant cause of death including among pregnant women and children. Cholera is still a concern, especially during the rainy season. Vaccination campaigns targeting yellow fever and polio have been running throughout the country in a bid to eradicate the disease.

See page 34 for how BP Angola supports institutional capacity building

#### **Development constraints**

The condition of the country's physical infrastructure – power and water provision, the road and rail network, and health and education systems – poses daily challenges to the Angolan people and to businesses. The need for a larger and better skilled local labour force, and the intense competition for qualified local labour, can also constrain business development.

The government's reform agenda addresses a number of these important issues, including improving access to credit, the provision of training, and streamlining licensing procedures while reducing their cost. Implementation of these initiatives, particularly in a difficult economic climate, is vital to improve competitiveness.

See page 34 for information on our social investment strategy

#### Ethics and transparency

Angola presents significant challenges for compliance with anti-corruption laws and the promotion of ethical business practices, currently ranking 164 of the 176 countries listed in Transparency International's 2016 Corruption Perceptions Index. Angola ranked 182 out of 190 economies in the World Bank's Ease of Doing Business Index in 2016.

See page 16 for our approach to antibribery and corruption

#### Environment

In recent years, the Angolan government has increased its efforts to protect the natural environment through legislation and monitoring of petroleum activities. BP supports the government's efforts and applies the same rigorous environmental standards in Angola as we do throughout our worldwide operations. Where appropriate in our operations, we work with the environmental authorities to assure that regulations are reasonable in the Angolan context and consistent with best international practices.

See page 28 for our approach to environmental management

## Our stakeholders

We engage with a wide range of individuals and organizations to understand society's expectations of us.

Our stakeholders are the many individuals and organizations who are affected in some way by BP's activities, whether it is in our role as an energy provider, an employer, or as a business that generates revenues and helps to boost local economies.

#### **Employees**

We inform our employees about plans and developments in our business and in the wider market. We communicate through town hall meetings where employees hear from the executive team, as well as panel discussions on industry themes. We have well-established channels to communicate with our employees and for them to raise any concerns they have. These include clear processes for dealing with problems or grievances.

#### Governments and regulators

We maintain dialogue with all relevant government agencies, ministries and regulatory departments in Angola. We work closely with Sonangol on social projects across the country. Where our expertise is valuable, we provide information and guidance to government agencies.

#### Our industry

Working with industry groups, we help establish standards and address complex energy challenges, collaborating with our peers where an industry response is required. For example, we collaborated with other operating companies in Angola and the regulators in 2016 on a major oil spill response exercise.

See page 26

#### Contractors and partners

Like our industry peers, BP rarely works in isolation. Safe and responsible operations depend on the capability and performance of our suppliers, contractors and partners. We set operational standards through legally binding agreements and build the capability of our

contractors through training. We continued to work closely with our contractors in 2016, reinforcing the message that everyone is accountable for safety in our operations.

#### Local communities

Angola faces many social and welfare challenges, so our relationships with communities are important for all our activities. Our social projects aim to support communities in building their capability, improving infrastructure, promoting education, supporting enterprise, and tackling challenges such as poverty. We engage with communities when developing new projects.

i See page 34

## Non-governmental organizations (NGOs)

Our social investment strategy involves collaborating with NGOs, who often act as implementing partners for our projects. We have established good relationships with a number of NGOs. For example, we have a long-standing relationship with ADRA and have worked together with them on a micro-credit and micro-enterprise initiative in Benguela and Huambo provinces.

i) See page 34

#### Academic institutions

We provide financial and technical support to Agostinho Neto University on courses relating to the oil and gas industry to build a body of people in Angola with expertise in the sector. We have also supported their faculty of science with investment in laboratories and equipment. Our social investment strategy includes a focus on support for education. For example, we have recently signed agreements with NGOs to promote teacher training. We support primary school education by renovating school buildings or building new schools.



Caption: We engage with local communities when developing and implementing social projects.

BP in Angola Sustainability Report 2016

BP in Angola Sustainability Report 2016

Data on our sustainability performance from 2012-2016.

### Production

	2012	2013	2014	2015	2016
Total hydrocarbons produced (thousand barrels of oil					
equivalent (mboed) per day) (Op and non-op)	149	180	182	221	223

## Safety

2012	2013	2014	2015	2016
0	0	0	0	0
0	0	0	0	0
5	2	6	1	0
0.093	0.035	0.098	0.018	0
17	15	18	6	3
0.32	0.27	0.29	0.11	0.08
0	0	0	0	0
1	3	0	0	1
7	22	4	7	2
31	22	33	16	17
9.2	5.4	8.8	4.6	7.7
2	0	1	0	0
0.6	0	0.3	0	0
10.8	11.3	12.3	11.2	7.2
3.4	4.1	3.8	3.5	2.2
	0 0 5 0.093 17 0.32 0 1 7 31 9.2 2 0.6 10.8	0         0           0         0           5         2           0.093         0.035           17         15           0.32         0.27           0         0           1         3           7         22           31         22           9.2         5.4           2         0           0.6         0           10.8         11.3	0         0         0           0         0         0           5         2         6           0.093         0.035         0.098           17         15         18           0.32         0.27         0.29           0         0         0           1         3         0           7         22         4           31         22         33           9.2         5.4         8.8           2         0         1           0.6         0         0.3           10.8         11.3         12.3	0         0         0         0           0         0         0         0           5         2         6         1           0.093         0.035         0.098         0.018           17         15         18         6           0.32         0.27         0.29         0.11           0         0         0         0           1         3         0         0           7         22         4         7           31         22         33         16           9.2         5.4         8.8         4.6           2         0         1         0           0.6         0         0.3         0           10.8         11.3         12.3         11.2

#### Selected indicators relating to safety

#### Reported recordable injury frequency<sup>c</sup>



#### Total Vehicle Accident Ratef



#### Loss of primary containment<sup>e</sup>



- <sup>a</sup> DAFWC: An injury or illness is classified as a day away from work case (DAFWC) if as a consequence of it the member of the BP workforce could not have worked on any day after the injury or illness, irrespective of whether there was scheduled work, or when a physician or other licensed health care professional recommends that the member of the BP workforce stay at home but the individual comes to work
- <sup>b</sup> The BP workforce comprises all BP employees and all BP contractors.
- <sup>c</sup> DAFWCF and RIF are the annual frequency per 200,000 hours worked. Recordable injuries are work-related employee and contractor incidents that result in a fatality
- d Tier 1 process safety events are losses of primary containment of greatest consequence - causing harm to a member of the workforce, costly damage to equipment

- of exceeding defined quantities. Tier 2 events are those of lesser consequence.
- <sup>e</sup> Loss of primary containment is the number of unplanned or  $uncontrolled \ releases \ of \ oil, \ gas, \ or \ other \ hazardous \ materials$ from a tank, vessel, pipe, railcar or other equipment used for containment or transfer.
- <sup>f</sup> Total Vehicle Accident Rate is the sum of all light vehicle and all mobile plant accidents per one million kilometres driven. Severe vehicle accident rate is the total number of work-related vehicle accidents (classified in accordance with severity levels) per one million work-related kilometres driven. Some historical data for total vehicle accidents and rates has been amended from previous BP in Angola sustainability reports following data re-validation.
- <sup>g</sup> Direct GHG emissions are the physical emissions from operations on an equity share basis

- <sup>h</sup> Indirect GHG emissions are a consequence of the import by operations of steam, electricity and heat on an equity basis from third-party sources.
- We provide data on GHG emissions material to our businesses on a carbon dioxide-equivalent basis. This includes CO, and methane for direct emissions.
- Oil spills are defined as any liquid hydrocarbon release of more than, or equal to, one barrel (159 litres, equivalent to 42 US gallons).
- $^{\rm k}\,$  This number includes both Angolan nationals based at BP's operations in Angola and those on overseas assignments.
- Some historical data has been amended from previous BP in Angola sustainability reports following data re-validation.

### Environment<sup>1</sup>

	2012	2013	2014	2015	2016
Direct carbon dioxide (CO <sub>2</sub> ) <sup>g</sup> (tonnes)	898,618	1,709,590	2,122,816	2,598,991	3,200,714
Direct methane (CH <sub>4</sub> ) (tonnes)	3,220	9,618	10,728	12,707	15,227
Direct greenhouse gas (GHG) (tonnes CO <sub>2</sub> equivalent) <sup>i</sup>	966,229	1,911,568	2,348,104	2,916,670	3,581,389
Total gas flared (tonnes)	308,095	1,016,261	1,195,106	1,030,492	1,039,825
Sulphur dioxide (SOx) (tonnes)	559	648	547	526	72
Nitrogen oxides (NOx) (tonnes)	3,828	6,319	5,980	5,749	3,626
Non-methane hydrocarbons (NMHC) (tonnes)	1,568	3,118	3,021	2,842	2,599
Number of hydrocarbon spills <sup>i</sup>	5	6	4	7	4
Volume of hydrocarbon spilled (litres)	2,144	4,498	1,746	4,773	2,622
Volume of hydrocarbon unrecovered (litres)	1,044	2,773	599	580	540
Hazardous waste disposed (tonnes)	760	640	1,220	5,062	608
Non-hazardous waste disposed (tonnes)	474	479	545	886	666

## **Employees**

	2012	2013	2014	2015	2016
Angolan nationals <sup>k</sup>	680	738	806	755	746
Non-Angolan nationals based in Angola	302	310	298	199	120
Total	982	1,048	1,104	954	866

#### Data tool





See *bp.com/hsechartingtool* for 10-year data on BP's health, safety and environmental performance.



# How we operate

Our operations are shaped by our strategy and values, our management systems and processes and BP group's strategic framework.

What we are doing			
BP Angola's strategy	13		
	13		
Governance and	45		
management systems	15		
Our values	15		
Our operations	17		
Our people	22		
		<b>E</b>	3

## BP Angola's strategy

We aim to build a safe, reliable and competitive business in Angola that benefits the country and our shareholders.

#### A key part of BP

Angola is one of BP's key regions for oil and gas exploration and development and a major part of BP's activity in deepwater exploration and production. Net production from BP Angola accounted for over 19% of BP's total net oil production worldwide (excluding Rosneft) in 2016.

We operate three deepwater offshore blocks in Angola and have commercial interests in four others. We also hold an interest in the Angola LNG project.

#### Our strategy in Angola

Our strategy in Angola is to build a safe, reliable and competitive business that benefits Angola and our shareholders. We must position ourselves to operate in an environment with declining production and low prices for an extended period while striving to create options for future investment. There are challenges ahead for our industry, for BP and for Angola, but our goals are clear. They are to:

- operate the existing business safely.
- stay competitive.
- continue to explore options for future projects; and
- develop and empower our people.

To pursue these goals, we seek to align our everyday business activities in Angola with the country's development. Our vision is for BP Angola to be recognized as the partner of choice and a positive contributor to Angola's development.

We also aim to create strategic partnerships for social and institutional development. We support a wide range of social projects in education, enterprise development, health, safety and environment, which aim to build capability and promote development in Angola.



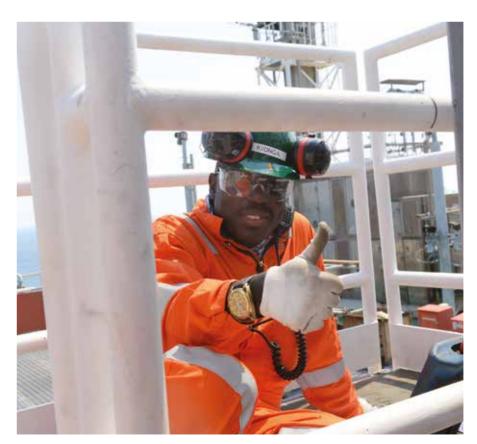
BP's strategic framework

"Sustainability is at the heart of BP's strategy.

Our strategic framework is rooted in society's need to use more energy while reducing carbon emissions. It reflects a changing global fuel mix in which oil remains important but is used more efficiently; the cleanest traditional fuel, natural gas, is a vital energy source in a lower carbon economy; and renewables grow faster than any other form of energy.

The four priorities of our strategic framework are aligned to these trends. First, we plan to run a highly competitive upstream business with an expanding gas portfolio. Second, we will have a marketled downstream business providing fuels and lubricants that help make vehicles more efficient and lessen their carbon impact. Third, we will run a growing renewable energy business, alongside a dynamic venturing arm. Fourth, we will underpin all of these businesses with an ongoing drive to modernize BP and maximize efficiency in ways which are good for business and good for the environment".

Bob Dudley BP group chief executive April 2017



Caption: A technician at work on Greater Plutonio.



Caption: An electrical technician on Greater Plutonio.

#### **BP Angola timeline**

Initial Amoco involvement in Angola.	1996
1996	Amoco acquires rights to block 18.
First discoveries in Blocks 15 and 17.	1999
2001	BP assumes operatorship of block 31.
Launch of offshore technicians training programme.	2001-06
2005	Exploration, pre-drill development wells drilling programme.
The BP Serpent project makes new biodiversity discoveries in offshore waters.	2005
2006	BP and oil industry partners launch CAE the enterprise centre.
Greater Plutonio Floating Production Storage and Offloading (FPSO) construction is completed.	2007
2008	First oil from Greater Plutonio; sanction the Angola LNG project.
BP makes 16th discovery in the ultra deepwaters of block 31; approval granted for the future development of block 31.	2009
	BP makes its 19th discovery in block 31
2010	
BP invited to negotiate access to four new exploration blocks.	2011
2011	BP and Sonangol sign new production sharing agreements as operator of bloc 19 and 24, with interests in blocks 20, 2 and 26
Block 17 Pazflor start-up.	and 26.
	2012
2013	PSVM (named after the 'dwarf planet' Pluto, and the planets Saturn, Venus an Mars) project first oil.
Angola LNG start-up.	2013
	PSVM FPSO reaches plateau production
2014	first cargo delivered from Angola LNG.
Block 24 exploration begins.	2015
2016	Completed Greater Plutonio phase 3 project.
Re-start of Angola LNG plant.	

## Governance and management systems

Corporate governance policies guide our operations and detailed processes are applied in the management of our day to day activities.

## BP Angola's governance and management systems

The BP Angola leadership team has responsibility for the direction and oversight of BP Angola activities. It seeks to achieve the business goals of creating a sustainable oil and gas company, producing returns that contribute to the success of BP's exploration and production business.

Our governance principles and management systems provide a framework for determining what we are trying to deliver and how we go about that delivery. In line with the rest of BP, controls include the BP code of conduct and our principles for delegation of authority. These are designed to make sure employees understand what is expected of them.

As part of the control system, the BP Angola leadership team checks that work focuses on the development and implementation of our strategy, provides assurance on performance and manages risks to delivery.

## BP's operating management system

Our operating management system (OMS) is a group-wide framework designed to help us manage risks in our operating activities and drive performance improvements.

OMS brings together BP requirements on health, safety, security, the environment, social responsibility and operational reliability, as well as related issues, such as maintenance, contractor relations and organizational learning, into a common management system.

It sets out the rules and principles that govern key risk management activities such as inspection, testing, competency development, as well as business continuity and crisis response planning.



Caption: Our systems, processes and people come together to help us identify and manage risks to the business

We undertake an annual performance improvement cycle and assess alignment with the applicable requirements of the OMS framework. Any variations in the application of OMS, in order to meet local regulations or circumstances are subject to a governance process.

#### Risk management

BP Angola is responsible for identifying and managing risks and bringing together people with the right skills to do this. We verify our conformance with safety and operating requirements and are subject to independent scrutiny and assurance.

We use BP-wide processes to continuously assess and manage any risks which might prevent us from achieving our business goals. These processes include quarterly risk review sessions focusing on safety and operational risks that may result in harm to people or damage to the environment. The reviews also cover a wide range of other technical and non-technical issues, such as strategic or commercial risk related to finance, legal and compliance issues, supply chain and external influences.

Risk management also involves review and support from our safety and operational risk team, which maintains an independent view of operating risk, provides assurance on how risks are being managed, and intervenes when appropriate to bring about corrective action. Our activities are also subject to periodic reviews by the BP group audit team.

#### Non-operated joint ventures

As part of the group risk assessment process, we identify the risks associated with non-operated joint venture activities and determine the level of risk exposure to BP. Where there are exposure risks of a certain level, we develop an action plan to address them.

#### Our values

We have five values that express our shared understanding of what we believe, how we aim to behave and what we aspire to be as an organization.



The values are embedded into our groupwide systems and processes, including our recruitment, remuneration, promotion and development assessments.

#### Ethical conduct

We lay out our commitment to high ethical standards in our code of conduct. The code is based on our values and clarifies the principles and expectations for how we work at BP.

The code applies to all employees and members of the board. We expect and encourage our contractors and their employees to act in a way that is consistent with our code and we take appropriate actions where we believe that they have not met our expectations, or their contractual obligations.

We train our employees on applying the code of conduct in their daily work. Each year, our employees and our board members certify that they understand the code, have abided by their responsibilities and have reported any breaches of which they were aware.

We have a dedicated ethics and compliance team in Angola that provides regular communication, training, and investigation in relation to all aspects of the code of conduct, gifts and entertainment, anti-money laundering, anti-bribery and corruption. The leadership team in Angola reviews progress against an annual plan twice a year. The review covers topics such as training completed and any areas where intervention is needed. An ethics and compliance committee, chaired by the BP regional president and involving other senior management, meets quarterly to set priorities, review issues, and drive action on the ethics and compliance programme.

We have a comprehensive programme of monitoring and reporting in place on how the code of conduct is being implemented. If required, we take disciplinary action, including employee dismissal, which we carry out in accordance with provisions in Angolan labour

We take steps to develop a culture of transparent business dealings in our own activities and in the wider business context. For many years we have supported a Master's degree programme in oil and gas law and a Master's in oil and gas administration at Agostinho Neto University which includes a module on ethics and social responsibility. Its aim is to demonstrate the benefits of conducting business in an ethical and transparent manner.

#### Speaking up

We want our employees, contractors and other third parties to feel comfortable speaking up whenever they have a question about our code or see something that they feel is potentially unsafe, unethical or harmful.

We encourage employees to discuss their questions or concerns with their managers, supporting teams or via BP's confidential helpline, OpenTalk. BP has zero tolerance for retaliation against anyone who seeks advice, raises a concern, reports misconduct or participates in an investigation. The consequences for misconduct or retaliation range from coaching and performance management through to dismissal.

We look for opportunities to reinforce our culture of speaking up. As an example, in 2016 during our ethics and compliance week, we promoted listening sessions where employees had the opportunity to express their views in areas of concern. During the week, events included two town halls where the regional president discussed the importance of



Caption: We encourage honest and open dialogue, in line with the code of conduct.

integrating ethics and compliance into our daily activities, and we held specific sessions on the challenges that arise in areas such as invoicing and supplier management.

#### Anti-bribery and corruption

Our code of conduct explicitly prohibits engaging in bribery and corruption in any form. We have a responsibility to our employees, our shareholders and to the countries and communities in which we do business to be ethical and lawful in our work.

Our group-wide anti-bribery and corruption policy applies to all BP-operated businesses. It sets out appropriate contractual commitments, risk assessments and training. In Angola, we provide training to those employees for whom we believe it is most relevant, depending on the nature of their role or in response to specific issues. Training was provided to approximately 200 people in 2016.

Before working with a supplier, we conduct an assessment to determine the degree of bribery and corruption risk posed. If needed, we then put in place a risk reduction plan. We also provide training to our counterparties to set our expectations and remind them of our zero tolerance policy of bribery and corruption once contracts are in place.

We introduced a local gifts and entertainments procedure in 2016 to address issues such as hosting events with government officials and to provide clear guidance on the appropriate processes to follow in relation to accepting or declining gifts and entertainment.

More information

Foundations for operating responsibly at bp.com/

View our code of conduct at bp.com/codeofconduct

## Our operations

We have made substantial investments in Angola's offshore development projects since the 1990s, and are now expanding the scale of our activities.

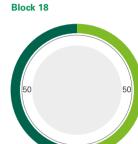
BP has been in Angola since the 1970s, and in the 1990s acquired interests in four deepwater offshore blocks some 200 kilometres northwest of Luanda. In 2011, we acquired interests in five new deepwater and ultra deepwater blocks in the Kwanza and Benguela basins to the south of the capital.

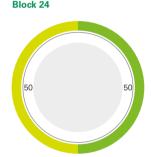
BP is one of the largest foreign investors in Angola, having invested approximately \$30 billion by the end of 2016, and with plans to continue to invest well into the future.

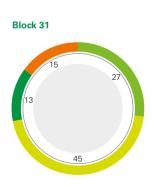
We are the operator of blocks 18, 24 and 31 and have non-operated interests in blocks 15, 17, 20, and 25 as well as in the Angola LNG project in Soyo. Our block 19 exploration licence expired on 31 December 2016 and the block has now been relinquished.

As part of ongoing portfolio evaluation, BP has decided to relinguish its 50% interest in Block 24 but remains committed to Angola and is now focusing on managing the base and exploring other opportunities that create value to BP and Angola.

#### **Block percentages (%)** Operated assets



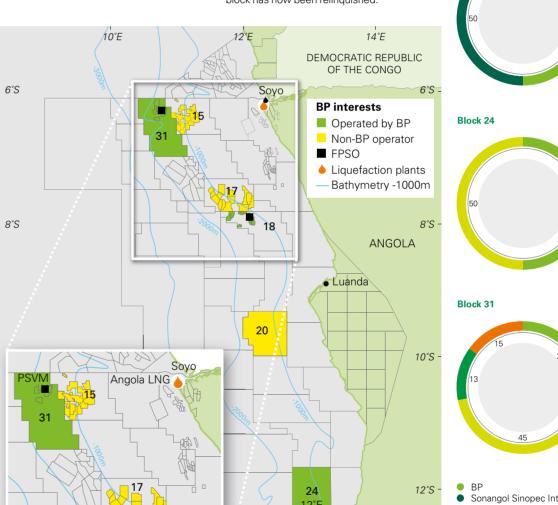






 Sonangol Pesquisa e Produção Statoil

Sonangol Sinopec International Thirty-one Ltd



25

Benguela

75

14°E

km

150

Greater

Plutonio

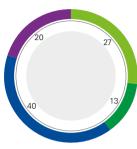
km

100

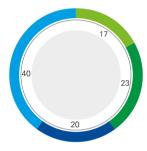
18

#### **Block percentages (%)** Non-operated assets

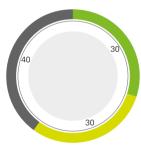
#### Block 15



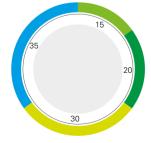
Block 17



Block 20



Block 25



- Statoil
- Sonangol Pesquisa e Produção Esso Exploration Angola
- FNI
- Total
- Cobalt International Energy

#### BP operated assets

Block 18 - Operated by BP

Partners: BP 50%: Sonangol Sinopec International 50%

Area: 5.000 square kilometres Water depth: 1,200-1,600 metres

Fields: The Greater Plutonio development, some 160 kilometres offshore, consists of five fields: Cobalto. Plutonio, Paladio, Cromio and Galio. Plans are being made for the future development of the Platina field.

Daily production: ~139,000 barrels per day (gross)

#### Block 24 - Operated by BP

Partners: BP 50%, Sonangol P&P 50% Area: 5,000 square kilometres Water depth: Varies from ~1,500 metres Fields: None - exploration phase Daily production: None

#### Block 31 - Operated by BP

Partners: BP 26.67%; Sonangol EP 45%; Statoil 13.33%; SSI Thirty-one Ltd 15%

Area: 5,349 square kilometres Water depth: ~1,500-2,500 metres

Fields: PSVM, the first project on block 31, is some 321 kilometres from Luanda and comprises the Plutao, Saturno, Venus and Marte fields and is one of the deepest development projects in the world.

Daily production: ~160,000 barrels per day (gross)

#### Non BP operated assets

#### Block 15 – Operated by Esso Exploration Angola

Partners: Esso Exploration Angola 40%; BP 26.67%; ENI 20%; Statoil 13.33%

Area: 4.349 square kilometres

Water depth: ~1,000-1,400 metres

Fields: Kizomba A (Hungo, Chocalho, Marimba North), Kizomba B (Kissanie, Dikanza), Kizomba C (Mondo, Saxi Batuque), Kizoma Satellites I (Clochas, Mavacola). Kizomba Satellites II (Kakocha, Bavuca, Mondo S) is

under development. The Xikomba field ceased production in 2011.

Daily production: ~315,000 barrels per day (gross)

#### Block 17 - Operated by Total E&P Angola

Partners: Total 40%; Esso Exploration Angola 20%; BP 16.67%; Statoil 23.33%

Area: 4,349 square kilometres Water depth: ~1,200-1,700 metres

Fields: Girassol, Jasmin, Rosa, Dalia and Pazflor (Acacia, Hortensia, Perpetua, Zinia).

CLOV (Cravo, Lirio, Orguidea, Violeta).

Daily production: ~600,000 barrels per day (gross)

#### Block 20 - Operated by Cobalt International Energy

Partners: Cobalt International Energy 40%, BP 30%, Sonangol P&P 30%

Area: 5,000 square kilometres Water depth: ~1,500 metres Fields: None – exploration phase Daily production: None

#### Block 25 - Operated by Total (TEPA)

Partners: Total 35%, Sonangol P&P 30%, Statoil 20%, BP 15%

Area: 5,000 square kilometres Water depth: ~1,500 metres Fields: None – exploration phase Daily production: None

#### Production sharing agreements

BP in Angola operates under production sharing agreements which set out the terms of engagement with the Angolan government. The agreements provide the framework for our relationship with Sonangol, the state-owned oil company, and include financial provisions relating to how operating costs are recovered, how profits are shared, and contains requirements on matters such as health, safety and the environment, the need to recruit and develop local workers and the preferential use of local suppliers where possible. Separate commercial arrangements apply to the Angola LNG plant, (see page 21).

#### Operational performance

Total net BP production from our major fields in Angola was 223,000 barrels of oil equivalent per day in 2016, similar to 2015 (2015 221,000, 2014 182,000).

Our floating production storage and offloading vessels (FPSOs) exceeded their internal targets, with full year plant efficiency of 94%. This represents our best performance to date. Similarly plant reliability remains robust, at an average of around 97% for both FPSOs.

We encourage our employees to identify and suggest areas where we can continuously improve our performance. Over the course of the year, we identified and acted on hundreds of suggested projects. For example, our operations teams have implemented projects to improve the management of spare parts and maintenance routines which have contributed significantly to better operational performance.

#### Block 18: Greater Plutonio

The Greater Plutonio development was the first BP-operated asset in Angola and consists of five distinct fields discovered between 1999 and 2001. The development uses an FPSO to process produced fluids and export crude oil. The FPSO is connected to the wells by a large subsea system.

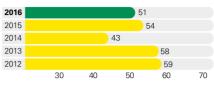
#### The Greater Plutonio FPSO

The FPSO is 310 metres long and has oil storage capacity of 1.77 million barrels, oil processing of up to 240,000 barrels of oil per day, a produced and treated water injection rate of 450,000 barrels per day and gas handling of up to 400 million standard cubic feet per day. It is held in position by 12 mooring lines connected to anchor piles on the seabed.

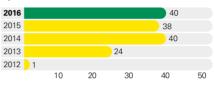
Plutonio FPSO averaged approximately 138,700 barrels of oil equivalent per day, at an operating efficiency of 93%.

#### **BP** Angola region: net production

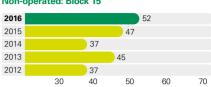
#### Operated: Block 18



#### Operated: Block 31



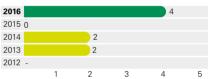
#### Non-operated: Block 15



#### Non-operated: Block 17



#### Non-operated: ALNG



In 2016, gross production from the Greater



## Greater Plutonio: a decade of operations

It has been 10 years since the hull of Greater Plutonio was eased into position above the oil and gas reservoirs of Block 18, leading to BP's first operated production from Angola. In this anniversary year, the vessel has another occasion to celebrate – 500 million barrels of oil have now flowed from these deepwater wells through the FPSO's processing plant and onwards for export to refineries across the world.

While the production milestone is reason to reflect on achievements of the past, we also have an eye on the future. We began a comprehensive refurbishment programme in further," added Wallace.

decade, and more, of operations.

"It has been our best year of production efficiency yet, and we remain focused on renovating the topsides and general fabric of the vessel," said John Wallace, Greater Plutonio offshore installation manager. "The salty maritime environment is always extremely punishing to any metal structure, especially in the heat and humidity of the tropics. Corrosion is a constant challenge here – hence the need for our rigorous maintenance regime."

We have a team of 24 dedicated to a renovation programme that includes re-coating the vessel's exterior surfaces, as well as making improvements to crew accommodation. "The target is to bring Greater Plutonio back to top condition for its next 10 years of life – and to look ahead even

#### Block 31: PSVM

Our PSVM operation (named after the 'dwarf planet' Pluto and the planets Saturn, Venus and Mars) consists of four fields spread over an area 34 kilometres wide and in water depths of up to 2,000 metres. The fields produce hydrocarbons via a large FPSO, which was the first in Angolan ultra-deep water. It has storage capacity of 1.6 million barrels.

PSVM produced an average of 162,500 barrels of oil per day in 2016, at an operating efficiency of 94%.

#### Block 15 and 17 developments

Block 15, which started production in 2003, is currently producing approximately 315,000 barrels of oil per day (bpd). The fields in this block are maturing, and projects are seeking to extend production from marginal fields. Block 17 is currently producing approximately 600,000 bpd from four FPSOs.

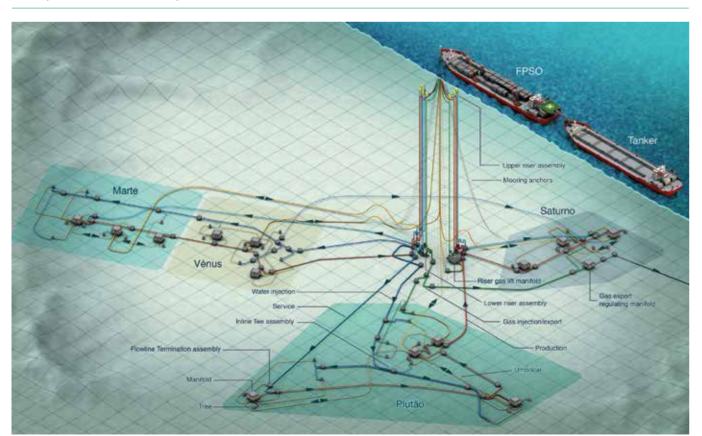
The most recent FPSO project, CLOV (Cravo, Lirio, Orquidea and Violeta), began production in 2014, earlier than planned, and reached plateau production of 160 mboe/d.



The export of gas has become a core part of our delivery model and the management of gas volumes is a daily activity between our operations, subsea, and base management teams and our Angola LNG joint venture partners

This involved cross-functional teamwork and integration with partners to allow the preparation of equipment, finalization of pipeline export agreements and testing of communications and procedures to check we had the correct level of assurance for initial start-up and subsequent operations.

#### Field layout of the PSVM subsea system and the FPSO



The Girassol and Dalia infill drilling projects, which involve adding new wells in an existing field within the original well patterns to increase recovery, continued in 2016. The five-year, billion dollar Rosa multiphase pump project was completed in 2016.

Maintenance work continues on the FPSOs, with successful completion of a planned maintenance on Dalia in 2016. Projects of this nature, intended to guarantee the FPSO's continuing integrity, are important to continuing efficient production from these assets.

#### Angola LNG

We are shareholders in the Angola liquefied natural gas (LNG) joint venture which owns an LNG plant in Soyo, Zaire province in the north of Angola. Angola LNG is an incorporated joint venture among Sonangol, Chevron, BP, ENI and Total. BP has a 13.6% share in the venture. It is the first LNG facility in the country and represents the largest single investment in the onshore Angolan oil and gas industry.

The plant has one LNG production facility with annual capacity of 5.2 million tonnes, as well as related gas liquids products. It receives approximately one billion cubic feet of associated gas per day from a number of offshore producing blocks, transported through pipeline infrastructure.

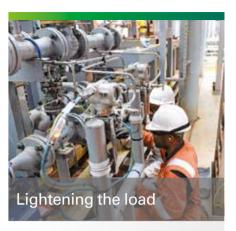
Following a technical incident in April 2014, which caused an unplanned interruption to production, the plant's planned maintenance (originally scheduled for mid-2014) was brought forward to address both technical and plant capacity issues. The plant restarted in the second quarter of 2016, and has been exporting LNG, condensate and propane cargoes globally since then, with butane being supplied to the Angolan domestic market.

The 22MW Soyo local power plant, which was funded as part of the LNG project, is in the process of being commissioned and is expected to be fully operational in the near future, supplying the local community with electricity.

#### Logistics and infrastructure team

BP's supply base, which officially opened in August 2007, is located on reclaimed land in the Sonils Logistics Integrated Services base near the port of Luanda and comprises offices, warehouses and yards. It is home to the logistics and infrastructure team and to representatives from other functions such as procurement and supply chain management.

The team manages the transportation of personnel and equipment to and from both FPSOs (Greater Plutonio and PSVM), one drilling rig and two subsea support vessels.



As part of our review of rental equipment at the PSVM development, we removed a number of items – like tool boxes, scaffolding, gas racks and welding machines – that were being held on the vessel but not used. This has already delivered equipment savings of \$750,000 in 2016 and eliminated man hours required for maintaining and inspecting the equipment. We continue to look for similar opportunities to reduce excess equipment and inventories elsewhere.

#### Angola LNG (%)



- BP
- SonagasChevron
- Total
- ENI



Caption: LNG cargo delivery.

BP in Angola Sustainability Report 2016

BP in Angola Sustainability Report 2016

21

## Our people

By building a highly competitive business in Angola, we aim to provide our employees with opportunities to grow and develop.

#### Reviewing our operating model

The current challenging economic environment, with a return to low oil prices, has required us to review our operating model to make sure we remain competitive and enable future growth. We have rigorously tested the value of all our proposed activities, looking for efficiencies and cost savings in our supply chain, and seeking to confirm that our organizational structure is appropriate for future activities

In light of this review, we reduced the number of BP staff positions in the Angola business in 2016 and 2017. This affected expatriate staff, Angolan nationals and UKbased staff. Throughout the process, we have been transparent in our communication and provided counselling and support to our people. We have maintained, and will maintain, an unwavering focus on safety. We will not, either as part of our simplification and efficiency efforts, or for any other reason, jeopardize the safety of our people or the integrity of our facilities.

#### Angolanization

Angolanization remains central to our strategy. Our goal is to increase the rate of Angolanization across all levels with robust succession plans being confirmed to accelerate nationalization in the years ahead.

Approximately 86% of our total workforce based in Angola are Angolan nationals, a significant increase on previous years. This is partly as a result of the reduction in the number of BP expatriates in Angola in 2015 and 2016. 2016 saw the appointment of our first Angolan National Area Operations Manager and the first Angolan Offshore Installation Manager, along with other team leader positions.

The majority of the BP Angola leadership team is now based in Luanda. An integral part of our future strategy involves providing support for development roles for key Angolans overseas

Our Angolanization goals are in line with government expectations related to the recruitment, integration and training of Angolan nationals. These expectations are reflected in a number of legal requirements in areas

such as local advertising for positions and visa restrictions which seek to control the entrance and permanence of non-Angolan workers in the country. A training decree also defines rules and procedures for the recruitment, integration, training and development of Angolan personnel.

#### Retention

Our staff voluntary turnover rate was approximately 1% in 2016, (2015 2%, 2014 4%). We are keen to enhance how we engage with our people, and to retain them within the business by providing a work environment that offers opportunity.

#### Diversity and inclusion

Our goal is to create an environment of inclusion and acceptance where everyone is treated equally and without discrimination. Across BP we recognize the benefits that arise from having a workforce which is diverse, and that an inclusive working environment brings the best out of people.

BP Angola participates in the BP Women's International Network, which aims to foster, develop and retain talented women in BP by providing a forum for making connections and sharing experience. The network organized a number of initiatives in 2016 including sessions hearing from BP women in positions of leadership and events on topics such as personal branding and work life balance.

We employ approximately 230 women in our Angola business, representing 22% of our total workforce. Currently, we have 30 women in managerial roles, a 16% representation of those in supervisory positions.

#### Learning and development

Our learning and development programmes enable our people to gain the experience we require before they assume operational and leadership positions. We encourage our staff to embrace different ways of learning, including on the job, by gaining experience with others, and through personal face-to-face

Programmes provide participants with a foundation of technical skills and development opportunities tailored to their needs. This includes the BP eXcellence programme, which provides a development structure featuring coaching and competency assessment to help promising individuals progress to senior roles. Our learning and development schemes are an important means of achieving the knowledge transfer required by our agreements with the Angolan government.

#### The scholarship programme

To develop a pool of skilled labour to recruit from, we have run a scholarship programme

since 2006 which supports students through university, typically in engineering disciplines. We help students during their studies, carrying out regular visits by the early development team and tracking and monitoring progress.

Over many years, graduates from our scholarship programme in chemical, electrical, mechanical, structural and petroleum engineering have joined BP in Angola. This has included the completion of university courses in Turkey, South Africa or the UK. In 2016, BP sponsored 15 students at universities in Durban and Cape Town in South Africa. Four of them completed their degrees in December 2016.

We require successful engineering graduates to undertake a final assessment which includes technical and behavioural interviews. Once this stage is completed they can join BP and enter the Challenge programme (see page 23). This programme currently has a total of 11

#### The offshore technicians programme

The offshore technicians programme offers routes for study and vocational training to young nationals looking to develop a career in the oil and gas industry. Programme graduates provide a pool of qualified people to help meet future BP needs. Trainees attend an intensive



Caption: Technicians in discussion on Greater Plutonio

English language course followed by two to three years technical training at a refinery/ training centre in engineering disciplines such as production, electrical, instruments and controls, mechanical and marine. The technical skills are acquired at institutions such as the SAPREF refinery (operated by a BP-Shell joint venture in Durban, South Africa), as well as Hull College, South Shields College and Warsash Maritime Academy in the UK.

More than 200 trainees have graduated from the programme since it began in 2001, including eight graduates in 2016. The vast majority of the current Angolan technician population on the Greater Plutonio and PSVM FPSOs graduated from the technician programme. Currently we have a total of 31 trainee technicians.

#### The Challenge programme

Aimed at graduates and postgraduates with up to three years' work experience, the BP Challenge programme was created in 1993 to help graduates develop their technical and professional skills.

The competency-based programme covers a range of disciplines, such as engineering, finance, subsurface and wells. It provides graduates with practical experience and formal training in their chosen discipline.

Participants undertake two to three job rotations over a period of three years. Each rotation provides appropriate field or operational experience. Individuals also receive up to 20 days of formal training every year, along with coaching, assessments and feedback. Once the three years are complete, graduates can go on to pursue a range of career opportunities, from technical specialists to leadership roles.

We had 60 Challengers working in the Angola region in 2016. In the course of 2016, five Challengers graduated from the programme and moved into their first professional roles and two new Challengers joined our procurement and supply chain management team.

#### Core training

In addition to these development programmes, we provide training in technical disciplines such as human resources, finance, subsurface, drilling and completions, health, safety, security and the environment.

On completion of the construction, I took part in the second leg of the tow between Singapore and South Africa, an exciting six-week journey. It was a unique experience. Upon arrival in Block 18 in February 2007. I started as a mechanical technician, handling the maintenance of the rotating equipment, alongside specialized field service engineers. When we had the much-anticipated first oil milestone – always a dramatic moment – it was truly 'mission accomplished'.

After a stint as mechanical supervisor that required me to develop my leadership skills, I was appointed Greater Plutonio maintenance team leader in June 2012. The dramatic improvement in the vessel's reliability and performance during the following period is among the highlights of my career. I was proud to be part of a team recognized for excellence internally in 2013 at BP's group-level Helios awards.

> Since then, I've also had the opportunity to work on board BP Angola's second offshore production facility – PSVM – in the role of maintenance team leader and maintenance execution manager.

Under BP's education assistance programme, I've also continued to pursue my education and completed a Master's degree in project management, oil and gas specialization, in the UK. It was challenging to balance work, personal life and education along the way - but the reward was worth it.

So far, my career has been an exciting journey. I am delighted to be part of BP Angola and am looking forward to the challenges ahead, with the opportunity to make a real contribution to the future of my country and my community through my

Seven out of every 10 BP Angola staff on Greater Plutonio come from the country itself. Among them, Danny Waya has worked with the team since 2003 and is the first Angolan in the role of area operations manager for Block 18.

Global industry,

ocal talent

"I joined BP in June 2003 through the apprenticeship technician programme. I was one of seven students who, due to our fluency in English, were the first to be sent abroad by BP Angola without going through English language schooling.

Our journey began at the BP and Shell South African Petroleum Refinery in Durban, where we were introduced to the oil and gas industry through an intensive study in engineering and controls disciplines.

Months later, we moved to the UK to study our respective disciplines at Hull College and BP's Saltend chemicals plant. It was a great learning experience to blend both college theory with hands-on practice in the plant and interact with people from another part of

I came home to Angola well-equipped with the right knowledge and skills to be part of the ground-breaking Greater Plutonio project in offshore Block 18. In 2006, having graduated in operations and maintenance engineering. Lioined the operations readiness team at a Hyundai shipyard in South Korea to prepare the massive FPSO for its departure for Angolan waters.

More information

See pages 35-36 for more information on how BP supports education and enterprise in Angola.

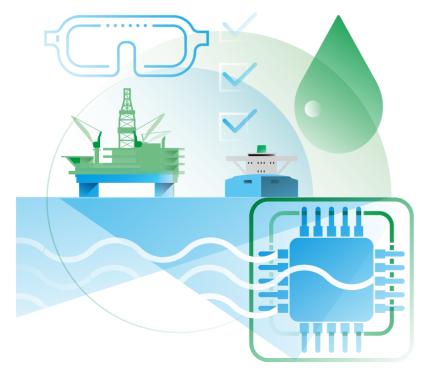
Find information on learning and development at BP globally at *bp.com/careers* 



# Safety, health and security

Safety is one of our values and our number one priority. Our stated aim is to have no accidents, no harm to people and no damage to the environment.

What we are doing	
Safety management and	
performance	25
Health and wellbeing	27
Security	27



## Safety management and performance

We take a rigorous approach to the management of risk with the goal of delivering strong safety performance.

There were three recordable injuries across all our activities in the Angola business in 2016 (2015 6, 2014 18). Our recordable injury frequency (RIF), which measures the number of injuries to the workforce per 200,000 hours worked, improved to 0.08 in 2016 (2015 0.11, 2014 0.29). There were no fatalities in our activities in 2016. Approximately 7.2 million man-hours of work were carried out in the course of the year (2015 11.2, 2014 12.3).

#### Workforce recordable injury frequency



FPSOs are technically complex work environments making it essential to remain alert to potential hazards. We continue to encourage 'near miss' reporting - events that have the potential, in slightly different circumstances, to cause harm to people, property or the environment. Near miss reporting is valuable because it enables us to analyse the activities being undertaken and take steps to prevent actual incidents from occurring. These prevention steps can contribute to continuous improvement.

Road traffic accidents remain a significant cause of death and injury in Angola partly because of the road infrastructure and also due to a lack of road safety awareness. The risks from road travel are particularly high for us because of the long distances driven by our workforce. While the number of kilometres driven by our workforce reduced significantly in 2016, we still drove more than 2.2 million kilometres. There were no severe vehicle



Caption: The 'Common Operating Picture' tool enables us to assess the extent of an oil spill

accidents, but our total vehicle accident rate, which incorporates minor incidents, increased (see 'BP Angola in figures' page 10).

We train our drivers and maintain our vehicles to help us manage the road safety risks for our employees and their families. We use journey risk management for long trips and an automated driving information system to monitor our drivers' behaviour.

We continue to support projects that raise awareness of road safety in the community. We set a positive example with our own policies and procedures on driving, such as using seat belts and not using mobile phones while driving.

## Managing the safety of our processes

We also concentrate on process safety, which involves applying good design principles (inherently safe design) along with robust engineering, operating and maintenance practices to maintain the safety of our operations. In our risk assessment process, we identify and develop mitigation plans for process and major accident risks. This covers risks that arise from drilling and completions activities, operations, and other production risks inherent in aviation and marine activities and oil spill response.

We had two losses of hydrocarbons from primary containment in our operations in 2016, an improvement on the seven in 2015. There were also five 'high potential' incidents, which are incidents that might have resulted in more serious consequences if circumstances had been slightly different. All high potential incidents are investigated by senior leaders. In all cases, immediate and management system causes and findings were established. We log actions and carry out reviews of lessons learned with senior managers, and implement the learnings.

#### Crisis and continuity management

Our Angola region crisis and continuity management framework defines response team accountabilities, outlines organizational arrangements, provides links to risk assessment and processes. It explains how we build capability through training, exercises and continuously improve our provisions through lessons learned.

In 2016, we revised all our crisis management plans with input from the BP group to address operational risks, such as how to manage the transition of making crew changes by boat instead of by air. We re-developed, tested and validated our civil unrest response plan.

Plans that relate to oil spill contingency for our operated blocks were also reviewed by BP experts and subsequently approved by government.



11

My placement at Oil Spill Response Services Limited gave me a broad insight into the approaches, equipment and practicalities of oil spill response planning and implementation. It was extremely useful not only to see all the elements of effective response but to understand how they come together in the field. The understanding and experience I gained will make us better prepared to deal with any incidents if they happen in Angola.

**Tina Domingos**Oil spill response advisor, BP Angola

We improved our processes for accounting for personnel in case of a crisis. The system we have put in place enables us to account for personnel during and after an emergency.

## Oil spill preparedness and response

Though our priority is prevention, spills can still happen. We take steps to improve our ability to respond should a spill occur, including simulation exercises, using technology to enhance our response capability, and oil spill response plans.

Response exercises are an important element of our approach. In 2016, we ran many drills and exercises to test and validate our plans. We held a major oil spill response exercise involving 135 participants from BP Angola, Angola authorities and selected members of oil and gas producing companies operating in Angola. Feedback from the event was positive and extensive, covering specific issues relating to how the exercise was carried out as well as broader recommendations on how to improve response capability.

We recognize the importance of developing the skills and experience of those responsible for emergency response and crisis and continuity management. We seconded our oil spill advisor to Oil Spill Response Limited, the industry funded co-operative that provides preparedness, response and intervention services. This placement provided practical insight into different oil spill response techniques. We also provided training for the BP Angola incident management team.

BP has also developed and deployed a webbased mapping tool, known as the common operating picture that visualizes, analyses and stores all of the diverse geospatial information that is generated during an incident. During our oil spill response exercise, we used the tool to enhance decision-making and co-ordinate resources by providing a holistic overview of the situation.

#### Contractor safety and compliance

The need to be rigorous and consistent in the way we engage and manage contractors remains critical to our goal of ensuring our activities cause no accidents, no harm to people and no damage to the environment.

In Angola, many of the activities in support of our operations are carried out by third-party contractors. Our strategy is to form deep relationships with our contractors, underpinned by rigorous selection and performance management processes. Understanding and complying with contractual requirements, including the management of their subcontractors, employee competence, HSSE and quality are critical to mitigating risks in our operations.

BP Angola also seeks to establish clear expectations of safety performance for each contractor, with a senior BP leader assigned accountability for managing the relationship and overseeing safety performance. We hold meetings with contractors to confirm our efforts are aligned and to continuously identify, manage and mitigate risks.



Caption: The oil spill response exercise reinforced the importance of effective communication between response teams

We have also identified a number of contractors with whom we will start a new 'Collaborative Efficiency Programme' in which both parties identify further areas for improvement and efficiency.

We plan to hold contractor forums in 2017 to review and discuss performance. The events will be run by our contractors where they will present analysis of safety performance, set out their approach to safety management and assurance, and share good practices.

#### Health and wellbeing

We identify and prioritize health risks to our workforce and the communities around us and target our interventions accordingly. Our regional health plan includes measures to tackle key risks such as malaria, medical emergency response capability, heat stress, fatigue, cardiovascular diseases and psychological health such as occupational stress.

We conducted training on industrial hygiene for the entire Angola health team. The training used the HealthMap tool, which is an online system that helps to identify, manage and track the management of health risks.

We recognize that health problems can arise for people whatever their working environment. In light of BP Angola's reorganization programme, carried out in 2017, we provided psychological support for all employees. We placed full-time national psychologists in our workplaces. We also held sessions on psychological health support, covering topics such as stress management and dealing with anxiety. We continued to provide support for expatriate workers through the Employee Assistance Programme.

We also carried out a range of activities to promote good health, focusing on fatigue, stress, drugs and alcohol, cardiovascular screening and infectious diseases.

## Managing the risk of cardiovascular disease

We undertook a screening programme for cardiovascular disease for staff at BP offices in our onshore and offshore locations. Those at risk were encouraged to have follow up consultations with specialists. We will carry out this type of screening annually.

#### Infectious disease management

Some health risks, such as those from outbreaks of disease, are largely outside our control. Changing patterns of infectious diseases remain a threat to people and business continuity.

We put a combination of preventative measures in place to minimize these risks or mitigate their impact, and we engage experts from outside Angola to review the steps we



Caption: We ran a vaccination programme for yellow fever in 2016 for employees and their dependents

take. A yellow fever outbreak was one of the threats at the end of 2015 and during the first quarter of 2016. We put measures in place to mitigate this risk, including an awareness and vaccination programme for all employees and their dependents.

#### Security

Our security professionals provide systems and processes that seek to protect our people, physical and digital assets, finance and investment, proprietary information, intellectual property and reputation from harm

We regularly assess the security risks faced by our people and our business. For example, to mitigate personal security risks, we provided advice to our expatriate community on street crime, given their greater exposure to this risk.

To protect our assets offshore, we engage with local authorities to prevent vessels from entering the 500 metre exclusion zone around our FPSOs.

BP is a signatory and founding member of the Voluntary Principles on Security and Human Rights, which provide a framework for companies to assess whether human rights issues are likely to occur as a result of security activities within local operations, and to allow appropriate precautionary steps to be taken.

We negotiated and signed a new contract with our security provider in 2016, and provided regular on-site training to maintain their awareness of risks and the procedures they must follow in the event of an incident.



# Managing environmental impacts

Our aim to continuously improve our environmental performance and reduce our risks.

What we are doing Climate change 29	
Environmental management 30	
Environmental performance 31	

## Climate change

Working with others, BP can help drive the transition to a lower carbon future. We want to bring down our greenhouse gas emissions - while supplying the affordable energy the world needs.

BP is working to make sure our business is sustainable - commercially, environmentally and in a lower carbon future.

The global energy landscape is changing. The energy mix is shifting, driven by technological improvements and environmental concerns. Fast-growing emerging markets are overtaking traditional centres of demand.

The energy transition underway poses a significant challenge - how to meet the world's growing demand for energy while also reducing carbon emissions. That creates important choices and opportunities for BP and our industry.

We are evolving our strategy - allowing us to be competitive in a time when prices, policy, technology and customer preferences are changing. Our strategy anticipates a range of scenarios to give us flexibility in our approach, rather than pursuing a single view of the future.

We believe having a balanced portfolio and a dynamic investment strategy gives us the resilience to meet the challenge.

#### Two decades of BP helping to tackle climate change BP's chief executive, Lord Browne calls for precautionary action to cut greenhouse gas (GHG) emissions. • BP sets target to cut emissions from our operations to 10% below 1990 levels by 2010. We met this target in 2001. • BP pilots an internal emissions trading scheme, helping to demonstrate the viability of emissions trading for BP is a founding member of the International Emissions Trading Association. 2000 • BP initiates the CO<sub>2</sub> Capture Project with other companies and governments, to develop carbon capture and storage (CCS) technology. • BP partners with Princeton University on the Carbon Mitigation Initiative, set up to find solutions to the carbon and climate Tsinghua-BP Clean Energy Research 2004 and Education Center launches in China BP and partners launch a CCS project at the In Salah gas field in Algeria 2005 BP launches its Alternative Energy business. 2006 BP launches Target Neutral, our not-forprofit carbon offsetting programme for 2009 BP begins using a carbon price in BP sets up the Energy Sustainability Challenge, partnering with 15 universities. 2011 BP becomes the largest operator of Brazil biofuels among our oil and gas peers. 2014 BP starts participating in the Oil and Gas Climate Initiative • BP endorses the World Bank carbon pricing statement. 2015

#### 2016

- BP completes detailed assessments of many of its upstream operations to identify primary sources of methane
- BP is world's first supplier of commercial jet biofuel using existing infrastructure at Norway's Oslo airport.
- BP launches *PTAir* with around a 30% lower carbon footprint than average European purified terephthalic acid production

- BP signs up to the World Bank Zero Routine Flaring by 2030 initiative.
- BP joins the Climate and Clean Air Coalition's Oil and Gas Methane
- BP launches Zhuhai 3 petrochemical plant, delivering 65% lower GHG emissions than comparable plants

BP in Angola Sustainability Report 2016 BP in Angola Sustainability Report 2016 29

## Environmental management

Our goal of achieving no damage to the environment auides our actions. We place the utmost importance on managing the environmental impacts of all our activities.

Our health, safety, security and environment (HSSE) policy sets out our expectations for HSSE performance in our operations.

In Angola, our principal operations are located offshore, more than 100 kilometres from centres of population. Potential environmental impacts from our activities fall mainly in the following areas:

- Waste generation, management and disposal: Hazardous and non-hazardous waste is produced from floating, production, storage and offloading (FPSO) operations, drilling rigs and onshore logistics sites.
- Operational discharges: These include drill cuttings generated when we drill into the seabed to construct a well. These cuttings are sent onshore for treatment. The main discharges from the FPSOs are produced water, slops and sanitary waste.
- Air emissions: These are generated mainly from the combustion of fuels in power generation for drilling, marine vessels, gas turbines from FPSO operations, fugitive emissions, well clean-up and testing operations
- Accidental spills: If an incident occurs and oil or chemicals are released to the environment, they have the potential to pollute the waters and land, affecting flora and fauna as well as users who depend on these resources.

#### Taking a systematic approach

We operate an environmental management system which meets the requirements of the international standard ISO 14001. This provides a systematic approach to managing environmental impacts and minimizing them wherever possible. We have mapped the system elements against the requirements of our operating management system to check they remain suitable, adequate, and effective.

#### Complying with legislation

Our compliance management system is an important tool in our drive to achieve safe. reliable and compliant operations. It enables us to identify relevant legislation, assess its applicability, examine controls and assign

For new projects, we carry out environmental impact assessments to assess potential impacts and define mitigation measures.

#### **Environmental monitoring**

We collect baseline data and monitor specific deepwater environments so we can better manage the potential impacts from our operations and exploration. This helps us plan drilling activities, lay pipelines and build offshore platforms, as well as respond to oil spills.

We began observing environmental conditions when we started seismic and drilling activities at our Greater Plutonio project in 2002. Since then, we have carried out extensive environmental monitoring around our offshore blocks. As a result, we developed actions to manage environmental impacts, including adjusting the use of drilling chemicals to minimize effects on seabed fauna.

#### **Environmental protection**

We attended Angola's first international conference on biodiversity and ecotourism in 2016, coinciding with World Environment Day. The event brought together international and local consultants and companies to discuss environmental issues. focusing on action to tackle the illegal commercialization of wild fauna and flora. The event demonstrated that BP cares about environmental issues in Angola and that the company is a valid stakeholder when it comes to environmental protection It was also valuable in developing the professional confidence of the environment team members who attended.

## BP's commitment to health, safety, security and environmental performance (HSSE)

Our goals are simply no harm to people, and no damage to the

no accidents, no harm to people, and no damage to

We will operate our facilities safely and reliably and care for all those on our sites or impacte by our activities. Everybody who works for BP anywhere who works for BP, anywhere, is responsible for getting HSSE right. The health, safety and security of everyone who works for us are critical to the success

We will continue to drive down the environmental and health impact of our operations by

used safely by our customers.

- Systematically manage our operating activities to continuously reduce risk and deliver performance improvement
- Comply with all applicable local laws and company policies and procedures.
- Consult, listen and respond openly to our customers, employees, neighbours, public interest groups and those who work with us
- Work with others our partners, suppliers, competitors and regulators - to raise the standards of our industry.
- Openly report our performance, good and bad.
- Recognize those who contribute to improved HSSE performance.
- Continuously improve our performance by improving the leadership, capability and capacity of our organization.

Our business plans include measurable HSSE targets. We are all committed to meeting them.



## Environmental performance

We provide information here on key environmental issues such as air emissions, waste management, water discharges, spills, noise and biodiversity.

#### Objectives and targets

We set annual objectives and targets to help achieve our goal of continuous improvement in our environmental performance. When setting these objectives, we concentrate on our most significant environmental impacts. Target setting takes account of risks, legal requirements and our specific business circumstances.

#### Performance

We describe the main environmental issue we manage in the environmental management section of this report (page 30). We summarize our performance below.

#### Air emissions

Our routine emissions to the atmosphere result primarily from FPSO gas flaring. Venting from the FPSOs and rigs, and power generation, including that from vessels, constitute additional emission sources. The emissions from these sources include carbon dioxide, methane, non-methane hydrocarbons, and oxides of nitrogen and sulphur (NOx and SOx).

Our total flaring volume in 2016, of approximately 1.04 million tonnes, was similar to the amount flared in the previous year (2015) 1.03Mte, 2014 1.19Mte). Flaring from Greater Plutonio increased in 2016 when compared with 2015 due to a combination of factors relating to reservoir management, equipment interruptions, and maintenance. The total volume of flaring is partially dependent on the availability of the Angola Liquefied Natural Gas (ALNG) plant to receive exported gas from our two FPSOs. PSVM has been exporting gas to ALNG since the second half of 2016, which has contributed to the reduction of gas flared at that facility.

#### Targete and performance in 2015 and 2016

Targets and	d performance in 201	5 and 2016	
Area	Targets and performance 2015	Targets and performance 2016	Comment
	Achieve chemical management conformance (with decree 97/14).	Achieve 100% chemical management conformance (Decree 97/14) (Greater Plutonio, PSVM).	Greater Plutonio and PSVM both 96% – continuing with chemical phase out plan.
Chemical management	No specific measures were set in this area.	Complete Decree 97/14 rollout training in Global Wells Organization (GWO) in 1Q.	
	No specific measures were set in this area.	Chemical product substitution plans in place (3Q) (GWO).	
Statutory plans	Achieve 100% on time delivery and renewal of plans, permits and licences.	Achieve 100% on-time delivery of plans, permits and licences (Greater Plutonio, PSVM and GWO).	
Waste management	Complete update of regional waste transfer notes process.	Deliver New Waste Transfer Note (WTN) in format of Decree 190/12 (Sonils supply base).	100% achieved by Greater Plutonio, PSVM and GWO.
	Zero spills to sea of more than one barrel.	Zero spills to sea (Greater Plutonio, PSVM and GWO).	Zero spills to sea i 2016.
Operational efficiency	No flaring above the level of the flare consent.	Maintain flaring volume commitment to Sonangol (Greater Plutonio (23,830 million standard cubic feet (mmscf); PSVM 10,981 mmscf).	Greater Plutonio: 31,110 mmscf. PSVM: 17,981 mmscf. We had to request additional consent be able to continue to flare gas.
	Update waste management and EMS awareness training module with focus on computer- based training.	Ensure all BP personnel complete Environmental Management System computer based training).	
Awareness	Reduce number of 'government reportable' incidents.	Reduce number of 'government reportables' to 60 (Greater Plutonio; 20 (PSVM); zero (GWO).	81 from Greater Plutonio. 40 from PSVM. 2 from GWO.
and reporting	No specific measures were set in this area.	Zero compliance notices (Greater Plutonio. PSVM, GWO).	1 from Greater Plutonio (received but then retracted Zero from PSVM. Zero from GWO.
	No specific measures were set in this area.	Achieve 100% on-time statutory reporting (Greater Plutonio, PSVM, GWO).	Greater Plutonio 100%. PSVM 100%. GWO 100%.

- Completed or progress in accordance with plan.
- Achieved partially or later than planned: some concerns over ability to deliver.
- Not completed

BP in Angola Sustainability Report 2016 BP in Angola Sustainability Report 2016 31 Our equity share direct greenhouse gas emissions increased slightly in 2016, totalling approximately 3,581 thousand tonnes of carbon dioxide equivalent (2015 2,917 thousand, 2014 2,348 thousand). In 2016, we established a greenhouse gas improvement programme, with a view to investigating opportunities to reduce flaring without compromising production.

#### Waste

We seek to implement the waste hierarchy of eliminating, reducing, reusing and recycling waste from our operations in Angola, wherever possible. We manage our waste through operational controls, setting objectives and targets, monitoring, auditing and conducting research or investigations when necessary.

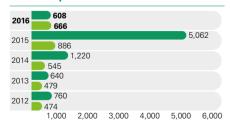
Our strategy, implemented through our waste management guidance at a facility level, seeks to make sure that we meet regulatory requirements and follow acceptable industry practices. This includes the need to oversee the activities of any waste contractors working on our behalf.

In doing this, we exercise a duty of care over our waste management practices in Angola – using waste transfer notes to document the movement of waste from generation through to transfer and handling by approved contractors and disposal.

The amount of hazardous waste disposed decreased significantly in 2016 to 608 tonnes (2015, 5,062, 2014 1,220). The principal reason for the decline was the reduced amount of activity in block 18, where no drilling occurred in 2016, resulting in fewer drill cuttings.

The amount of non-hazardous waste disposed also declined, to 666 tonnes (2015 886, 2014 545). From the total waste generated (including both hazardous and non-hazardous waste), we re-used or recycled 280 tonnes, equal to approximately 22% of the total.

#### Waste disposal



Hazardous waste disposal (tonnes)
 Non hazardous waste disposal (tonnes)



Caption: The water treatment system on PSVM.

#### Water discharges

We try to manage our wastewater discharges so that we do not adversely impact the quality of the receiving waters. The wastewater streams that we manage include ballast water, bilge, cooling water, produced water, grey and black water, and rainwater run-off.

An important part of our strategy lies in the chemicals selection process. We endeavour to select chemicals that pose little or no risk to the environment in accordance with established criteria. In 2016, we discharged 3,482 tonnes of drilling chemicals (from block 31), a significant reduction on 2015 (19,259 tonnes) because there were no drilling activities in block 18 in 2016.

We monitor the amount of oil in produced water from Greater Plutonio and PSVM. The majority of produced water is re-injected into the well formation, which eliminates the negative impact of oil discharges to the environment. Following successful re-injection trials in 2015, PSVM started re-injecting its produced water in 2016. We monitor and report on the number of occasions when we exceed desired levels for oil in water, known as 'oil in water excursions'

## Oil spill preparedness and response

Our approach is to seek to minimize the amount of oil or chemicals that reach the environment, develop actions to prevent reoccurrence and report all incidents to the regulators as required by law. There were no spills that reached the environment in 2016. There were a total of four spills of more than one barrel from our activities in 2016 but all of them were contained. The total volume spilled from these incidents was approximately 2,622 litres – equal to approximately 16.5 barrels (2015, 4,773, 2014 1,746).

#### Noise

We take steps to understand how our operations may disturb marine habitats or sensitive areas. Our monitoring stations in Angolan waters gather sound data as well as data on ocean currents, temperature and water chemistry, and photographs of marine life. The stations are designed to be in place for 25 years and help us to understand long-term patterns in the deepwater environment, including sound associated with our activities



# Maximizing value to society

We support social and economic development by investing in education and enterprise development, and by helping to build the capacity of local institutions.

The economic value we deliver in Angola (2016)



## Our socioeconomic contribution to Angola

We invest to develop local people, build the capability of local companies, and create strategic partnerships for institutional and social development.

We believe that societies and communities where we work should benefit from our presence - through the oil we produce, the taxes we pay, the jobs and opportunities we create for local suppliers, the knowledge transfer and capability building, and the investment of our time and money in people.

#### Our social investment strategy

BP Angola's community and social investment programmes seek to support our long-term business strategy and the government's development priorities.

We believe that helping individuals throughout Angolan communities and contributing to the creation of effective institutions is central to this. With each programme, we are working towards improvements that are measurable and that have the potential to persist long after our support has come to an end.

We make social investments in three main areas:

- · Education.
- Enterprise development
- Institutional capability development.

We also consider projects relating to health. safety and the environment where there is a significant shared benefit to BP and local communities. We provide humanitarian support in circumstances where there is immediate need to provide goods, services, expertise, or financial aid.

#### A partnership approach

To deliver our projects and programmes, we work with strategic partners who implement the projects we finance

We pay special attention to developing the capability of the organizations we work with. We seek to involve the potential beneficiaries of our projects so that they are empowered and have a role in making the projects sustainable over the longer term.

Our aim is to engage openly and transparently, through dialogue and consultation with implementing partners and beneficiaries, as well as government, communities and other representatives of civil society who have a legitimate interest in our operations.

#### Project selection and evaluation

We provide framework guidance to potential partners to help them develop project plans and objectives. The process involves a direct relationship between all parties in which BP evaluates the proposals and provides support to set goals and performance indicators. Each project proposal is evaluated in accordance with a clear process, overseen by a project selection committee.

#### Our social projects

Over the past decade, BP has invested millions of dollars through various channels in social initiatives that support the development of Angolan communities. In 2016, we spent approximately \$2.1 million on community programmes.

See page 38 for a full list of our social investment projects



In the midst of the rainy season in Angola from January to April, hospitals throughout the country and particularly in Luanda were severely stretched and lacked resources to address the problems caused by a yellow fever outbreak that killed more than 350

In response, BP Angola staff launched an appeal in Angola and the UK which raised more than \$100,000 for the Divina Providência Hospital

Father Fernando Alves Tchilunda, the hospital manager, said that the donation would help to help meet the need for disposable items and medicines in short supply.

"Part of this donation will go to the malnutrition centre where we have been having difficulties in our fight against this problem," said Father Tchilunda.

A group of BP employees toured the hospital, visiting wards and talking to patients.

"My colleagues at BP were touched by the substantial increase in cases of malaria and vellow fever," said BP Angola sustainability and public affairs manager Adalberto Fernandes. "We decided to launch this appeal, and collected the funds to show our solidarity with the plight of the people. For the same reason, the company also felt the strong desire to contribute," he added.

The Divina Providência Hospital was selected due to its location in the community where it works to provide primary health care of high quality. Established in the 1990s, Divina Providência is embedded in a densely populated area. The hospital has a network of four health centres in the Kilamba Kiaxi municipality. It provides general and specialist health care including tuberculosis, paediatric. gynaecology and orthopaedic treatment.

The 130-bed hospital is staffed with 30 doctors and around 100 nurses. Support from BP and its employees will make a valuable difference and helped to alleviate the pressure on other main hospitals in the city centre.

## Supporting education

We support projects in Angola that improve educational institutions and vocational training as well as helping individuals gain access to primary and secondary level schooling.

Through our social projects we aim to support the government in enabling access to education, improving the condition of rural schools and providing opportunities for vocational training.

This can involve improving school buildings, increasing the scientific and technical capability of teachers and school leavers, supporting university education, developing the capacity of institutions to provide better educational services, or helping individuals gain the skills and opportunities they need to contribute to society.

#### Access to education

Since 2003, BP has funded projects for the construction of several schools in the provinces of Luanda, Benguela, Huambo, Huíla, Moxico, Uige, Kwanza Norte, Kwanza Sul and Zaire. In the past five years, our partnership with Rise Angola has helped to construct 10 schools in rural and semiurban areas in order to make education more accessible to local communities. This initiative now helps with the education of approximately 9,000 children, and provides jobs for around 250 local teachers.

#### Facilities to support professional training

We also focus our efforts on developing people's skills so that they can make a valuable contribution to the country's development. These initiatives are often linked to strengthening training and development institutions

#### Building capacity in oil and gas

In 2007, we assisted the UAN law faculty in establishing a Master's (LLM) programme in oil and gas law. The objective of the programme is to create a strong network of Angolan professionals with thorough knowledge and understanding of the oil and gas industry. The course contains a wide range of modules including ethics and transparency, oil and gas technology, contracts, tax and environmental law.

The original LLM programme has been transformed into two full Master's degree courses. Students can now take either a Master's in oil and gas law or a Master's in oil and gas business administration. A new course on environmental management and governance, also supported by BP, is being

These programmes have involved students from a wide range of institutions such as oil companies, legal firms, the Ministry of Petroleum and the Ministry of Finance. The programme's academic and networking opportunities have enabled its graduates to make a significant contribution in their chosen fields, reducing the industry's reliance on foreign technical assistance.

In addition to training oil and gas professionals and future leaders of Angola in managerial, technical and legal aspects of the industry, the programme has raised awareness within government, industry and academia of the importance and benefit of ethics, transparency and good governance.

In July 2016, BP Angola held a workshop on oil and gas for journalists, which was attended by various public and private media. This short training course helped to improve understanding of the technical, commercial, environmental and legal issues facing the industry among important stakeholders.



#### New polytechnic institute for the Kikolo community

In August, BP and its partners in Block 18 opened a polytechnic institute that will train students in electricity, computer science and mechanics. BP funded the construction of the \$1 million 18-classroom educational facility for 2,500 students under the Block 18 social investment portfolio.

In opening the facility, BP highlighted the vital role of education in the development of Angolan young people and reaffirmed the company's commitment to supporting educational initiatives in Angola.

The school will create 45 new jobs for teachers and administrative staff and will train technicians in electrical skills, IT and mechanics. It will be run by the Ministry of Education and the Sisters of St. Catarina de

Church leader Sister Maria spoke about how the church has been delivering education in the community for more than a decade. She highlighted the three-year journey to build the school complex as a continuation of the work started in 2002 in response to a government call to provide basic education for children in

"The priority was to expand our activities to the next level to support those students who had completed the first education cycle" she said. "In 2013 we embraced this project to build a bigger school, working in harmony with the community and our partners. Teaching requires sacrifice and dedication and we thank Sonangol, BP and others for making this institution a reality." she added.

#### Promoting enterprise

By promoting enterprise development in Angola, we aim to create more job opportunities and support economic diversification.

To address the risk of over-reliance on oil, the government has been seeking growth in the non-oil sector, with a public sector investment programme that attempts to diversify the economy, complete reconstruction and address key infrastructure gaps.

Our key contribution lies in maximizing oil and gas production, which creates revenues for the government, but we also help to develop the national economy in other ways. We support projects that empower people and give them the opportunity to help themselves and provide technical expertise in support of initiatives that boost economic diversification and create new commercial ventures.

#### Building local economic capacity

We aim to promote the use of local suppliers and to maximize local content in our operations and projects. We have developed goals for local content, such as maximizing total spend with local suppliers in Angola, which are in line with the BP global framework for local content strategies, issued in 2016.

Provisions within the production sharing agreement (PSA) seek to make sure that the social and economic benefits arising from our activities are shared for the country's good. For example, in conducting our operations, we are required to give preferential treatment in certain circumstances to local labour and to the acquisition of nationally-produced goods, machinery and equipment. In taking this approach, the PSA seeks to support local economic development while adhering to the standards of the international petroleum

Developing the capability of our Angolan staff and local companies drives job creation, economic growth and contributes to infrastructure development throughout the country.

#### Simplification and efficiency

To help our suppliers, and to simplify our processes, we successfully moved onto a new supplier management system in 2016. We communicated with and trained suppliers to make sure that the new approach was well known and that they were ready for the change.

We made several other significant improvements to our processes for managing suppliers. We ran local content strategy sessions in support of regulatory authority requirements from the Ministry of Petroleum, as well as the national concessionaire to demonstrate our commitment to furthering

the development of Angolan suppliers and business engagement. We made a significant reduction to our inventory costs, and, where prudent, reduced third-party costs through renegotiation and efficiency saving.

We also sought to manage operating costs more effectively, by for example, consolidating our office accommodation from three offices to two in Luanda. We achieved this ahead of plan and under budget.

#### Local supplier engagement

In 2016, BP Angola spent approximately \$579 million (44% of total spend) with local suppliers. Over the course of the year, around 100 local companies were involved with BP in various projects at any one time.

BP representatives participated in two workshops on local content, organized by the Centre for Enterprise Development in 2016.

The main objective was to provide an overview of the oil and gas industry and its supply chains to local providers, and to give them a clear insight into tender processes. There was a high level of engagement with participants during a guestion and answer session, including comments from local companies on the challenges they face in addressing international business principles in areas such as safety and due diligence.

In November 2016, BP participated in the first Africa Oil and Gas Local Content conference and exhibition in Luanda, organized by the AME Trade under the initiative of the Africa Petroleum Producers Association. The initiative was designed to find solutions to the challenges of meeting localization requirements and building local skill sets across the hydrocarbon industry in Africa.

The main topic discussed at the event was how to achieve a rate of 30% local content in a range of oil and gas activities by 2030.



Since 2005, BP and its Block 18 partners have invested \$2.5 million in an agribusines programme in Huambo province, 600 kilometres southeast of Luanda. The programme aims to help communities build capability and gain access to bank credit to fund their activities. Some 3.000 farmers from 10 cooperatives have benefited from

BP hosts a UK delegation

agribusiness programme

visit to the Huambo

In 2016, a delegation from BP Angola visited the programme with the UK trade envoy for Africa, Baroness Northover. The visit's purpose was to enable those involved to see the potential for partnerships with British companies and to share learnings from one of BP Angola's effective enterprise

this success can be replicated in other parts of the country.

The delegation spent time with members of the co-operative that BP supports and visited a maize plantation to discuss some of the technical aspects of the farmer's daily activities, along with the benefits, challenges and future of the programme. The cooperative has 129 members, more than half of whom are women, and grows maize, potatoes, soy and vegetables.

The farmers involved lived in extreme poverty in 2005. The initiative has helped in a number of ways. Now they can, for example, run co-operatives which pay taxes, own their own land, build warehouses and grinding mills, buy tractors, motorcycles, build their own houses and send their children to school. Their production is of sufficient quantity and quality to supply the local market, and to be exported to the Democratic Republic of Congo and Congo Brazaville.

## Capability development

#### Our social investment initiatives seek to build the capacity of local people and institutions

Angola continues to face social challenges including poverty and living conditions that limit opportunities for many people. While there are many challenges in urban areas including Luanda, some of the most acute problems are found in areas distant from the capital.

We and our partners support projects that contribute to development and seek to alleviate poverty. They cover practical initiatives such as improving access to basic services (such as schools, social centres, or hospitals) and helping individuals in their private lives – such as supporting those who are less able, or providing rehabilitation services

We support a variety of projects that aim to improve community health, reinforce the importance of safety, and protect the natural environment



Encouraging reading

School libraries play a critical role in reinforcing the reading skills of children, and in fostering the habit of reading. For children to become independent readers, effective communicators and lifelong learners, they need time to practice, and exposure to a variety of texts. School libraries can fill that void, providing both access to engaging reading material and a safe space to learn and play.

We are supporting a programme that aims to create school libraries that encourage students to develop a life-long habit of reading. The initiative, which is implemented by Rise Angola, also seeks to train teachers in the classification and organization of books to increase their effectiveness in teaching literacy skills and promoting the habit of reading.

Two libraries were established in June 2016 at Jimba-Silili and Kuguema primary schools in Bié province. Together, the schools are benefiting more than 1,500 students and 50

teachers. Those that will be part of the library were trained in how to set up and use the library, care and maintenance, understanding how to recommend and maximize the resources, and how to engage students to foster a love of reading. The establishment of the libraries included the purchase of books and classroom furniture.

My pupils love the Bibliotheca so much. They are very excited about it. Our director prepared a plan for every teacher to have one day a week in which their lessons are given in the library. The children love it. We can see on their faces that they are grateful. My students said that from today they want me to give them all their lessons from the library!

Timoteo Arão

Three other libraries will be established at the Bocoio High School, Santa Cruz Alta primary school in Benguela province, and Sendi secondary school in Huila with the introduction of internet, computers and



Since September 2016, BP has been working with MAT to improve English language proficiency for local administration officials. This includes building the capacity of the Training Institute of Local Administration (IFAL) and will result in the establishment of

two centres of English excellence (in Luanda and Huambo). These will offer long-term quality English language training.

English remains the primary language of international business and BP is keen to support an initiative which enables Angolan officials and institutions to benefit more fully from the training, networking, and business opportunities that exist within the Southern African Development Community. The English language remains a powerful tool for regional integration, economic diversification and institutional capability.

This project is aligned with the local government modernization plan within the National Development Plan (2013-17) and with the Angola government's long-term development strategy to 2025.

#### Kitabanga research project

The Kitabanga research project aims to increase the protection of sea turtles along the coast of Angola. It is being supported by BP and implemented by the Science Faculty of Agostinho Neto University with the participation of the National Air Force, coastal communities and volunteers.

To date, the project has increased knowledge about the status of sea turtles in Angola and has educated coastal communities about the conservation of turtles. Sensitive areas have been protected and new born turtles safely delivered to the

The project covers an area equivalent to 55.5 km (3.3% of the Angolan coast) in a range of locations.

## Our social investment projects

We focus our social investment on a broad range of projects, supporting education, enterprise development and capability development.



Caption: Our social projects seek to contribute to development and alleviate poverty.

#### BP Angola and partner social projects

Project name	Purpose	Location	Timescale	Total budget (US\$)	Funding	Partners
Education						
Conservation of marine turtles	Apply research to support the preservation of marine turtles in the coast of Angola, provide university students practical experience and raise awareness among local communities of the need to preserve turtles	Benguela, Luanda, Namibe, Zaire	2011-16	827,700	BP100%	Faculty of Science (Agostinho Neto University)
Medical lab simulator for nurses	Equip a nursing lab to allow students and professionals to have practical lessons, especially for procedures and skills required during emergency or trauma situations	Luanda	2015-16	293,000	Block 18	JMJ& Nursing Institute
Master's degree in oil and gas law and management	Build a local knowledge base in petroleum law and management	Luanda	2007-16	1,639,000	BP100%	CEJES (Agostinho Neto University)
Community and professional internship programme	Offer university students work experience with direct contact with communities in urban, semi-urban and rural areas with the aim of supporting them in the preparation of degree theses; provide them practical experience of the labour market and key social issues	Bengo, Benguela, Cunene, Huambo, Luanda, Zaire (Soyo)	2010-16	981,000	Block 31 and BP100%	DW
Master's degree in environmental governance and management	Build the capacity of technical staff to develop skills related to the sustainable exploration of resources and protection of the environment	Luanda	2014-16	278,500	BP100%	Science Faculty (Agostinho Neto University)

Project name	Purpose	Location	Timescale	Total budget (US\$)	Funding	Partners
Masters scholarships for Angolan students	Contribute to the professional growth and development of key individuals with the potential to become future leaders in various sectors including in the area of health	UK	2015-18	300,000	Block 31	British Embassy in Luanda
Room to Read Accelerator	Build on investments made by BP and its partners with by providing a wide range of books, resources and to increase the effectiveness of teachers and librarians	Benguela, Bíe and Huíla	2015-16	200,000	BP100%	Rise Angola
English Language Proficiency	Support the establishment of an English Learning Centre of Excellence to ensure sustainable training for government officials and employees	Luanda	2015-16	300,000	BP100%	IFAL
Escola do Sendi: phase 2	Construction of amphitheatre and multi-use sports field and purchase of a generator for evening classes	Lubango	2016-17	80,000	BP100%	Rise Angola
Youth Centre	Additional funds for the centre, to focus on training and recreational activities for young people in the community, building in the element of social inclusion	Moxico	2016-17	290,000	BP100%	Rise Angola
Construction of community centre – Se Catedral do Lobito	Provide youth with a multi-use facility for professional training and cultural activities	Benguela	2015-16	1,274,000	Block 18	Rise Angola and Se Catedral do Lobito
Sports ground for Patriota school	Development of a sports ground in Patriota school to provide an inclusive education for youth and students	Luanda	2016	50,000	BP100%	Rise Angola
Enterprise develo	ppment					
Greater Plutonio agribusiness	Help communities organize themselves, build capability and have access to bank credit in order to fund their activities	Huambo and Benguela	2005-16	2,700,000	Block 18 and BP100%	ADRA
Capability develo	pment					
Acquisition of medical equipment	Acquisition of equipment for stomatology and X-ray, and basic training for staff	Luanda	2016-17	250,000	BP100%	Divina Providencia
Health crisis fund raising campaign	Support the needs of a major hospital and four medical centres on the outskirts of Luanda due to a yellow fever outbreak	Luanda	2016	112,000	BP100% and employees	Divina Providencia
Combating malnutrition	Combating malnutrition and micro-nutrient deficiencies in children	Bengo	2016-17	125,000	BP100%	CISA

## About this report

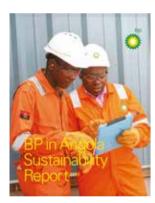
#### About this report

This report covers the activities of BP Angola, focusing on our performance in 2016 while providing relevant updates on developments in 2017. It has been prepared by our business in Angola, which is based in Luanda. We show data for activities where we are the operator, unless indicated otherwise.

In the report, references to 'BP' and the 'BP group' shall mean BP p.l.c., its subsidiaries and affiliates and, unless otherwise stated, the text does not distinguish between the operations and activities of BP p.l.c. and those of its subsidiaries and affiliates. Unless specified otherwise, references in this report to 'us'. 'we', and 'our' shall refer to companies in the BP group operating in Angola.

Unless otherwise indicated all currency amounts are denominated in US dollars.

Front cover image:



Caption: Warehouse supervisor and colleague at the BP supply base, Sonils.

#### Cautionary statement

BP in Angola Sustainability Report 2016 contains certain forward-looking statements with respect to the financial condition, results of operations and businesses and certain of the plans and objectives of BP with respect to

By their nature, forward-looking statements involve risk and uncertainty because they relate to events and depend on circumstances that will or may occur in the future and are outside the control of BP. Actual results may differ materially from those expressed in such statements depending on a variety of factors including future levels of industry product supply; demand and pricing; operational problems; general economic conditions; political stability and economic growth in relevant areas of the world; changes in laws and governmental regulations; exchange rate fluctuations; development and use of new technology; changes in public expectations and other changes in business conditions; the actions of competitors; natural disasters and adverse weather conditions; wars and acts of terrorism or sabotage; and other factors discussed elsewhere in this document and in BP Annual Report and Form 20-F 2016.

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BP's corporate reporting suite includes information on our sustainability and financial performance, as well as our global energy and technology projections. We also publish issue briefings on oil sands and unconventional gas development.





#### Sustainability Report 2016

Details of our sustainability performance with additional information online.

bp.com/sustainability



## Oil sands issue briefing

Information on our approach to developing energy from Canada's oil sands.

bp.com/oilsands



## Unconventional gas issue briefing

Details of our approach to managing the potential impacts of hydraulic fracturing and unconventional gas development.

bp.com/unconventionalgas



## Annual Report and Form 20-F 2016

Details of our financial and operating performance in print and online.

bp.com/annualreport



#### BP Energy Outlook 2017 edition

Provides our projections of future energy trends and factors that could affect them out to 2035.

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## Statistical Review of World Energy 2017

An objective review of key global energy trends.

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#### **BP Technology Outlook**

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#### Feedback

We welcome feedback on this report. You can write to us at the address below, marked for the attention of the Communications and External Affairs team, or send an e-mail to us at bpangola@bp.com

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