

# BP in Angola Sustainability Report 2010



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# Scope of report

This report covers the activities of BP Angola, focusing on performance in 2010 while providing information on developments in 2011. It has been prepared by our business in Angola, based in Luanda. Data is shown 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.

As with our two previous BP in Angola sustainability reports, this report has been independently verified.

## An introduction to Ernst & Young's assurance process

We have reviewed the *BP in Angola Sustainability Report 2010* in order to provide assurance to BP management that the data, statements and assertions made regarding the sustainability performance of BP in Angola are supported by evidence or explanation. Our scope of work and conclusions can be found on page 32.



Front cover image

Evaristo Manuel, BP Angola Warehouse Coordinator

## Cautionary statement

*BP in Angola Sustainability Report 2010* contains certain forward-looking statements concerning the businesses, operations and strategy of BP.

By their nature, forward-looking statements involve risks and uncertainties because they relate to events and depend on circumstances that will or may occur in the future. Actual results may differ 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 2010*. Material is used within this document to describe issues for voluntary sustainability reporting that are considered to have the potential to significantly affect sustainability in the view of the company and/or are expected to be important in the eyes of internal or external stakeholders. Material for the purposes of this document should not, therefore be read as equating to any use of the word in other BP p.l.c. reporting or filings.



For more information go to  
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# What's inside?

BP Angola's sustainability report aims to provide an overview of our operations and performance in 2010 and 2011.

We would like to thank the external stakeholders, including non-governmental organisations, academics and government officials who gave us their views on BP in Angola and what they would like us to report on. These issues included our approach to tackling social challenges, our Angolanisation programme, our response to the Macondo incident, and our work with suppliers and partners. All these topics are discussed in the report. This stakeholder input, as well as media coverage, helped us focus on issues of external concern, especially those which could have an impact on our operating successfully in Angola.

 **Group sustainability reporting**  
[bp.com/countrysustainabilityreports](http://bp.com/countrysustainabilityreports)

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The BP Angola region president reviews recent developments and prospects



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Creating a material, high performing and sustainable business



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## An introduction from the BP Angola region president



Our aim in BP Angola is to build our business in a way that contributes to Angola's physical, social and economic development.

In building our business here, we are simultaneously contributing to national development by helping to develop the capacity of local people and institutions. Our programme of Angolanisation, in which we are recruiting and widening the experience of local employees through secondments, focused training programmes and sponsorships, is building a well-qualified local workforce. Development opportunities for our people are wide-ranging, and arise in engineering and technical disciplines as well as fields such as procurement and petroleum law. We are taking many and varied initiatives to give Angolan staff the opportunity to develop their skills and qualifications.

We are also continuing to help the growth of the Angolan oil and gas sector. We forecast that our gross operated expenditure with local suppliers will be some \$350million in 2011, in a range of market areas. We support training and development in the supply chain. In our social investment projects, which focus on education and enterprise, coupled with those carried out with our partners, we are tackling social challenges of priority to our stakeholders. Our micro-finance project in Huambo and Benguela, for example, is helping people escape from poverty and is building public-private partnerships that serve to strengthen the community. Our support for the engineering and science faculties at Agostinho Neto University provides another example of how we are contributing to the education and the future growth of the economy.

The impact of the Deepwater Horizon incident in the Gulf of Mexico in 2010 was felt by many people and communities, including us here in BP Angola. In the light of the incident and the response to it, we undertook fundamental reviews of our policies and processes. As our operations in Angola take place in deepwater environments, we trialled and tested a subsea capping stack mechanism and sought to further develop our emergency response capability. We shared the lessons learned from the accident with key Ministries and industry players locally and in line with the whole of BP we have taken steps to put safety and operational reliability at the heart of our activities.

I am pleased to report that we carried out our operations in Angola without a fatality and with an improving reported occupational injury frequency rate in 2010.

Having faced a number of challenges in our operations that had an adverse impact on production and our projects, we are working hard to improve the reliability of our facilities while simultaneously implementing the lessons from Deepwater Horizon. We are also tackling the challenges involved in executing our projects reliably. We are continuing to focus on how we oversee our contractors, manage competency development, recover costs and create alignment with Sonangol on the right project concepts to progress future developments.

We have made important progress in developing our longer-term prospects. Good progress continues to be made in the Angola LNG project, the first major investment by the international oil and gas industry onshore in Angola. We were selected to exclusively negotiate four new offshore exploration blocks (two as operator) that would give us access to possible additional hydrocarbon resources well into the future.

Many stakeholders have high expectations of the oil and gas industry in Angola, given its importance to the country. We need to continue to manage these expectations carefully so that our role and the contribution we can make is properly understood. Many challenges arise that shape the business context here, in a country that continues to re-build after prolonged conflict. For example, demand for highly skilled national staff outstrips supply, and the labour market is highly competitive and inflationary. And despite improvements, the supply chain and physical infrastructure are still developing and require further investment. We are very aware of these and other challenges because we confront them on a regular basis in our day to day activities. In tackling them, our goal is to make a positive contribution to national development while building a sustainable and high-performing business in Angola.

A handwritten signature in black ink that reads "Martyn Morris". The signature is written in a cursive, slightly slanted style.

**Martyn Morris**  
BP Angola region president  
November 2011

**Building long-term value** We are committed to building a material, high performing and sustainable business in Angola that benefits the country and our shareholders and is staffed and run predominantly by Angolans

BP companies have had interests in Angola since the 1970s. Over the past 40 years, we have expanded our operations steadily to become a major contributor to Angola's oil and gas sector. Our goal is to maximise long-term value through safe and reliable operations, resource recovery, superior wells and project execution and disciplined appraisal of existing discoveries.

### **Safety and operational risk**

We are placing safety and operational risk management and compliance at the heart of BP Angola. Our aim is to build trust through active engagement with key stakeholders to protect BP's license to operate and enhance our reputation. We have reviewed our production and drilling operations in the light of the Deepwater Horizon accident in 2010, and have trialled a capping stack mechanism for potential use in a deepsea emergency. The importance we give to safe operations is shown by our decision to restrict production temporarily from the Greater Plutonio development to carry out projects tackling corrosion in process equipment identified during routine maintenance.

**Read more about our focus on safety and operational risk management on page 17.**

### **Delivering reliable operations**

We are taking steps to improve the reliability of our operated assets, in blocks 18 and 31, and improve rates of recovery. We are transforming our operations by using advanced technology, activity planning and leveraging economies of scale as the asset base expands. We are working to develop a second production hub in block 31, coupled with further work on resource appraisal and maximising the value from existing operations.

**Read more about our operations on page 9.**

### **Developing our local workforce – Angolanisation**

Our ability to recruit and develop Angolan nationals is an important aspect of building a relationship of mutual advantage with the concessionaire. In the highly-competitive local labour market, we are seeking to recruit more Angolan staff and develop their capacity. We are committed to having a quality Angolanisation programme, in which we not only recruit individuals in line with our targets, but develop their skills so that they can assume leadership positions.

**Read more about how we are building our local workforce on page 13.**

### **Working with local suppliers**

We spend significant amounts with local Angolan companies. In our Block 31 PSVM project, Angolan suppliers are providing goods and services including offshore fabrication, operations maintenance, fuel provision and others. Management of the Enterprise Centre (CAE) – an initiative driven by Sonangol and initially implemented by BP to help build the local supply chain, has recently been taken over by the Angola chamber of commerce – an example of how steps we have taken to develop local capacity have taken root.

**Read more about working with local suppliers on page 27.**

### **Supporting societal needs**

Our social investment approach – focusing on education and enterprise development – is aiming to develop capacity that will contribute to Angola's economic growth and socio-economic stability, aligned with Government priorities and UN millennium development goals. We work in partnership with local non-governmental organisations and community groups, encouraging them to develop their own capabilities. Our aim is for these initiatives to become genuinely sustainable and to prosper independently in the long term.

**Read more about our social projects and capacity building on page 27.**

### **Building long-term value**

Being selected to negotiate for production sharing contracts in respect of four new blocks in the Kwanza and Benguela basins is an indication of confidence in our exploration track record and a demonstration of our long-term commitment to extend production long into the future. We are also a partner in the Angola LNG project – the first in-country onshore development in Angola by international oil companies.

**Read more about our projects on page 10.**

## BP Angola in context Working in Angola, a developing country with a heritage of conflict, creates a demanding operating context for business in which a variety of economic, physical, and social challenges affect day-to-day activities



1 Road side market, Benguela – Luanda road  
2 Luanda – Huambo road

### The need to build economic and social capacity

Since the end of civil war in February 2002, Angola has remained stable and peaceful. The country is undergoing a transition from a period of long and devastating conflict, with a countrywide infrastructure reconstruction project and a private and public economic-social recovery plan.

To date, the transition has successfully provided for national security, and given reasonable political, military, economic and social stability. However, further development of the country's human and institutional capacity is required in order to eradicate poverty and create a more prosperous society. The UNDP calculates, for example, that 37% of Angolans live in poverty in 2010, a significant improvement on the 68% in 2001 but reflecting the progress still needed, which also requires tackling the more widespread challenge of rural poverty.

### Infrastructure development

The years of conflict have left much of the country's basic services – power and water supplies, the road and rail network, and health and education systems – in poor condition. These pose daily challenges to the Angolan people as well as to businesses which would like to operate in the country. The current lack of a local, skilled workforce and a developing legal and regulatory environment can serve as additional constraints for business development and foreign investment.

### Economic diversification

With Angola being the second largest oil producer in sub-Saharan Africa after Nigeria, the oil sector continues to drive the economy, supporting the country's reconstruction and boosting foreign investment. However, strong dependence on the oil sector means that Angola is heavily exposed to the vagaries of global demand. In 2009, for example, the collapse in oil prices contributed to weak GDP growth of around 2% against the double-digit growth of the previous five years. Inflation remains high, indicating the high cost of doing business in Angola.

### Economic indicators

	2007	2008	2009	2010	Source
Real GDP growth %	20.3	13.2	2.0	<b>6.7</b>	CEIC/World Bank
Inflation, annual average %	11.78	13.2	14.0	<b>13.4</b>	Angola Central Bank
Currency (exchange rate)	75.0	75.1	88.7	<b>92.0</b>	Angola Central Bank
OPEC basket price, \$/barrel	69.0	94.4	61.0	<b>76.2</b>	OPEC
Angola oil production (mbd)	1.6	1.9	1.9	<b>1.7</b>	Sonangol

To address this challenge, the government plans to promote growth in the non-oil sector, with initiatives to improve performance and investment levels in agriculture and manufacturing. Angola has announced investments of more than \$8 billion in the next four years to bolster its economic transformation. The plan is to allocate \$4 billion to industries aimed at increasing exports and to reduce imports of a range of products from food to building materials.

BP in Angola recognises the risk of over-reliance on the oil and gas industry, and the need to manage the high expectations that stakeholders have of the oil and gas industry. While our key contribution lies in maximising oil and gas production (and hence government revenues), we play a supporting role in related areas. For example, we support economic diversification by buying goods and services from local suppliers, developing the skills of the local labour force, and promoting education and enterprise development in our social investment programmes.

### Social challenges

The context described opposite creates a wide range of social challenges, notably in fields such as health. Malaria continues to plague Angola. Official statistics confirm that it is the country's main killer disease and the principal cause of morbidity and mortality among pregnant women and children younger than five. Malaria prevention programmes, including our own, have been implemented throughout the country with a focus on education and wide use of mosquito nets. Cholera is still a concern, especially during the rainy season. Vaccination campaigns targeting poliomyelitis have been running throughout the country in a bid to eradicate the disease.

Further information on the social context in Angola is provided on page 25, where we set out the actions we are taking to contribute to social development.

### Transparency and good governance

National and international challenges relating to transparency and governance also affect our activities in Angola. Transparency International's 2010 Corruption Perception Index report ranks Angola 168th (out of 178) with a score of 1.9 out of 10. Despite the low score and ranking, there are signs that the government has a new approach to transparency and governance, with the President urging his party to implement a zero-tolerance policy on corruption. BP is a founder member of the Extractive Industries Transparency Initiative and is working with NGOs and other stakeholders to further these aims.

We seek to go about our business here in a way that supports transparency and good governance, in line with our values and the BP code of conduct.



Angola Central Bank, Luanda

# How we operate

BP in Angola operates in accordance with BP's system of internal control that governs the group's operations worldwide

## Governance and management systems

Pursuing our business goals within a clear management framework

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## Our operations

Our Angola operations, described here, represent an important part of BP's upstream portfolio

Page 9



## Developing our people

We aim to build a successful and enduring business in Angola, staffed and run primarily by Angolans

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## BP's strategy – Angola and worldwide

We aim to deliver long-term value to our shareholders and the countries in which we operate

### BP Angola in the context of BP worldwide

BP Angola is one of BP's key centres for hydrocarbon exploration and development and a key part of the BP group's activity in deepwater exploration and production. Our activities therefore represent an important part of the group's strategic portfolio. Net production from BP Angola represented approximately 7% of total BP group net oil production worldwide in 2010.

### BP worldwide

BP operates globally, providing energy from oil and gas and also from low-carbon sources for transportation, heat and light, and retail brands and products used in everyday life. We have business activities and customers in more than 80 countries and approximately 79,700 employees. We have exploration and production interests in 29 countries, which include our activities in Angola.

In 2010, the BP group produced the equivalent of more than 3.8 million barrels of oil and gas equivalent per day for customers across the world.

BP replaced its annual production by 106% in 2010, the eighteenth consecutive year that our reported reserves replacement ratio has exceeded 100%.

### BP group's strategy

We are determined that BP will be a safer, more risk-aware business. We will deliver on our commitments from the Gulf of Mexico incident and work hard to earn trust in our operations. We will rebuild value for our shareholders by re-establishing our competitive position within the sector by playing our part in meeting the world's growing demand for energy as well as participating in the transition to a low-carbon economy.

### Our strategy

Our strategy in Angola is to build a material, high performing and sustainable business that benefits Angola and our shareholders and is staffed and run predominantly by Angolans. Our aim is to maximise long-term value through safe and reliable operations, resource recovery, superior wells and project execution and disciplined appraisal of existing discoveries.

To pursue these goals, we aim to align our everyday business activities with the country's advancement. The strategy recognizes that Angola faces challenges in translating its oil wealth to country wealth. The result of this is that the business and country agendas are closely linked. Our vision is for BP

Angola to be recognized as a local company and a positive contributor, making a difference to the well-being and advancement of the Angolan people and their economy.



Martyn Morris, BP Angola Regional President at the Extended Leadership Team, offsite meeting

Our strategy in Angola is to build a material, high performing and sustainable business that benefits Angola and our shareholders and is staffed and run predominantly by Angolans.

#### Exploration and Production

Our strategy is growing long-term value by continuing to build a portfolio of enduring positions in the world's key hydrocarbon basins, focused on deepwater, gas and giant fields. This will be enabled by strong relationships built on mutual advantage, deep knowledge of the basins, technology and the development of capability along the value chain in exploration, development and production.

#### Alternative Energy

Our focus is on low-carbon businesses and future growth options which we believe have the potential to be a material source of low-carbon energy and are aligned with BP's core capabilities. These are biofuels, wind and solar, along with demonstration projects and technology development in carbon capture and storage.

#### Refining and Marketing

Our strategic focus is on holding a portfolio of quality, integrated, efficient positions and accessing available market growth in emerging markets. Our objective has been to improve our performance by focusing on achieving safe, reliable and compliant operations, restoring missing revenues and delivering sustainable competitive returns and cash flows.

#### Gulf Coast Restoration Organization

This separate organizational unit was established to provide the necessary leadership and dedicated resources to ensure BP meets its commitments to fulfill its clean-up responsibilities and to support the long-term effort to restore the Gulf Coast.

# Governance and management systems

High-level corporate governance policies guide our operations and detailed processes are applied in our day-to-day activities

## Timeline

### 1970s

Initial Amoco involvement in Angola

### 1996

Amoco acquires rights to block 18

### 1999

BP assumes operatorship of block 31

### 2001

Launch of offshore technicians training programme

### 2001-06

Exploration, pre-drill development wells drilling programme

### 2005

The BP Serpent project makes new biodiversity discoveries in offshore waters

### 2005

BP and oil industry partners launch CAE – the enterprise centre

### 2006

Greater Plutonio FPSO construction is completed

### 2007

First oil from Greater Plutonio; sanction for the ALNG project

### 2008

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

## BP Angola's governance and management systems

The Angola leadership team has responsibility for the direction and oversight of BP Angola activities. It seeks to achieve the business's strategy of creating a sustainable Angolan energy company, producing returns that contribute to the successful delivery of BP's exploration and production business.

In pursuit of this strategy, the leadership team operates in accordance with a set of governance principles and management systems. These provide a framework for determining what we are trying to deliver and how we go about that delivery. Our operating management system (OMS), being implemented in Angola, is designed to enable the business to achieve its commercial goals – through strategy, planning and execution – while operating safely, ethically and responsibly by applying values, standards and controls.

In line with the rest of BP, controls include the BP code of conduct (*see page 15*), our leadership framework and our principles for delegation of authority. These are all designed to make sure employees understand what is expected of them. As part of the control system, the BP Angola leadership team is supported by work that focuses on the development and implementation of our strategy, provides assurance on performance and manages risks to delivery.

To manage the risks which might prevent us from achieving our business goals, we carry out risk assessments which cover a wide range of technical and non-technical issues. We also apply group standards, which set out requirements in areas such as safety and integrity, through to detailed administrative instructions on issues such as fraud reporting. The way we manage our people (*see pages 13-15*), is based on setting performance objectives in which individuals are accountable for delivering specific elements of the plan within agreed boundaries. While safety has long been an element of how we reward people, our new performance management system, developed after the Deepwater Horizon incident, provides for explicit links between safety and reward, linked to our values and behaviour.

## Our values

We are updating our values, with a goal of ensuring they support the way we conduct our business. In all our activities, we expect high ethical standards and act in accordance with our code of conduct.

Our values are there to guide us in everything we do, and the events of 2010 renewed our focus on the need for a shared understanding of what we believe, how we behave and what we aspire to do as a company. Our experience especially highlighted the importance of long-term thinking, collaboration across teams and the humility to learn lessons and listen to others.

## Using our influence

Where we are partners in activities in Angola operated by others, we seek to influence them through dialogue and constructive engagement to work towards standards and policies comparable with our own.



1 Fatima Bengue, Operations Team Leader



2 Launch of OMS in BP Angola

**Our operations** We have been present in Angola since the 1970s and since the late 1990s have made substantial investments in the country's offshore development projects with the result that Angola has become an important part of the group's upstream portfolio

**The Production Sharing Agreement**

BP's operations in Angola are undertaken under a Production Sharing Agreement (PSA) which sets out the terms of engagement with the Angolan government. The PSA provides the framework for our relationship with Sonangol and includes financial provisions relating to how investment costs are recovered and profits shared, as well as requirements on non-financial matters such as health, safety and the environment (HSE), the need to recruit and develop local people and the preferential use of local labour and materials where possible.

Our relationship with Sonangol, the state-owned oil company, is an extremely important aspect of our activities in Angola. This is not only because of its role in managing the development of the country's hydrocarbon reserves on behalf of the country, but also because Sonangol's influence in the wider economy is significant. Its portfolio ranges from the whole chain of oil industry services, to capital investment in the banking sector, and includes internationalization initiatives that have taken Sonangol businesses to Brazil and

Iraq. More recently Sonangol entered into the real estate sector, managing the biggest government real estate project.

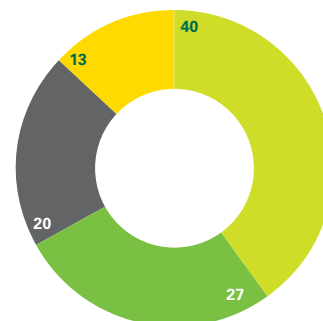
**Deepwater production blocks**

Our Angola operations include interests in four deepwater production blocks offshore. We are the operator of blocks 18 and 31 and have non-operated interest in blocks 15 and 17. The discovered resource in these blocks is more than 2 billion barrels of oil equivalent net.

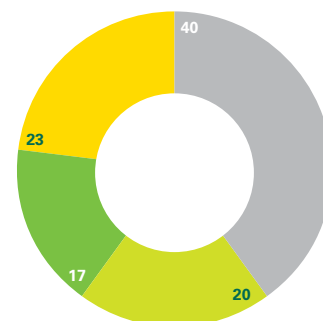
BP's operations in Angola are undertaken under a Production Sharing Agreement (PSA) which sets out the terms of engagement with the Angolan government.

**Block percentages (%)**

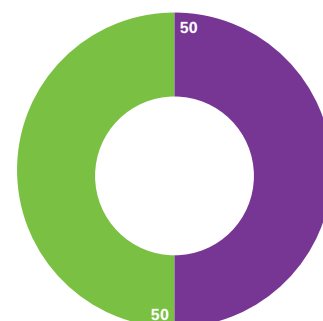
**Block 15**



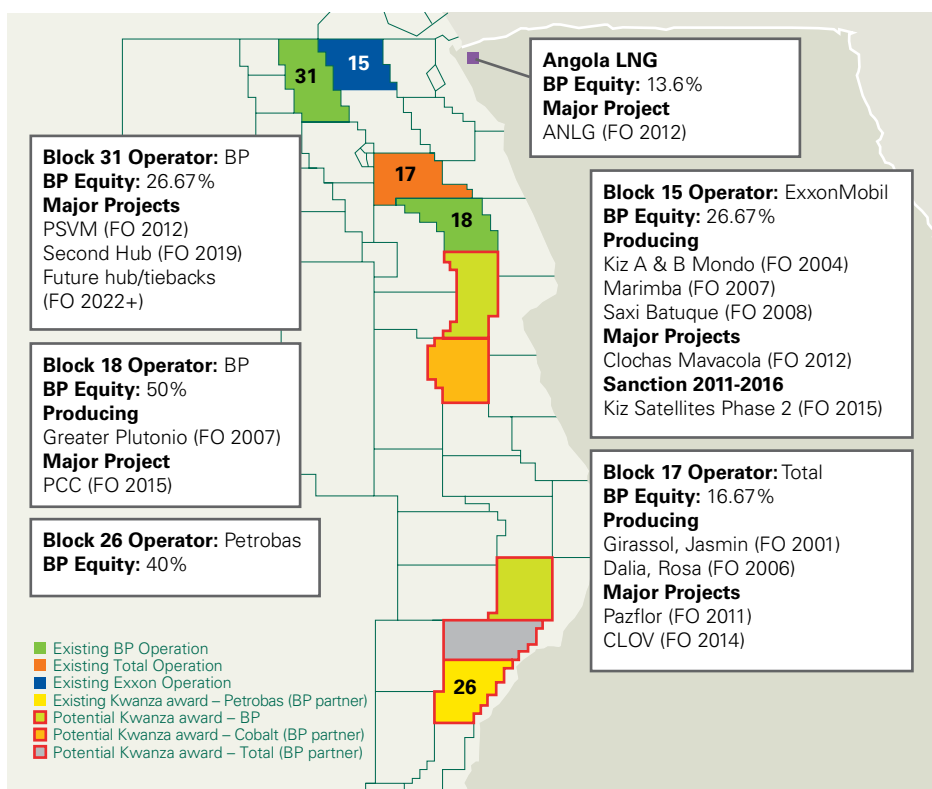
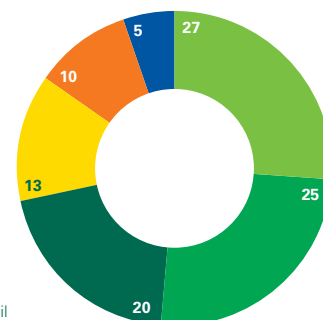
**Block 17**



**Block 18**



**Block 31**



### Block 18: Greater Plutonio

The Greater Plutonio development is currently the single producing asset in block 18. It was the first BP operated asset in Angola and consists of five distinct fields discovered in 1999-2001. The fields lie in water depths of up to 1,450 metres. The development uses a floating production storage and offloading vessel (FPSO) to process produced fluids and export crude. 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, 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. The FPSO was formally inaugurated in September 2007, with first oil delivered in October that year.



Front side view of FPSO Greater Plutonio

### Block 31

Operatorship of block 31 was awarded to BP in May 1999. The block covers an area of more than 5,300 km<sup>2</sup> and lies in water depths of approximately 1,400-2,700 metres.

We are developing block 31 through a project known as PSVM – the development of the Plutão, Saturno, Vênus and Marte fields.

The development will use a new FPSO, built in Singapore. The FPSO will produce an estimated 150,000 bopd at plateau, with a production design capacity of 157,000 bopd and a storage capacity of 1.8 million barrels. It is planned to include 40 producer wells, water and gas injector wells plus eight infill wells; 15 manifolds and associated subsea equipment; and will encompass 170 kilometres of flowlines and 95 kilometres of control umbilicals.

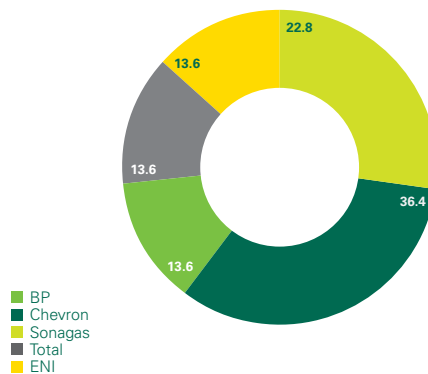
Our aim is to ensure that as much of the PSVM programme content as possible is produced locally. A number of in-country framework contracts have been agreed which will lead to the construction of equipment at every major fabrication facility within Angola. Our aspiration is that the project will create many direct and indirect jobs.

### The Angola LNG Project

We are partners in a project to develop an LNG (liquefied natural gas) plant near Soyo in Zaire province in the north of Angola.

ALNG and the associated infrastructure represents a major oil industry investment in Angola in support of recovering and monetizing gas resources, reducing gas flaring and establishing a local gas industry. Construction and implementation of the project is proceeding and the plant is expected to start up in 2012.

#### ALNG ownership (%)



The Angola LNG project (ALNG) is an incorporated joint venture project involving Sonangol's subsidiary, Sonagas (22.8%), and affiliates of Chevron (36.4%), Total (13.6%), ENI (13.6%) and BP (13.6%). The LNG facility will initially be a one train plant with a capacity of 5.2 million tonnes of LNG production per year, as well as related gas liquids products. Once fully operational, it will receive approximately 1 billion cubic feet of associated gas per day gas from a number of offshore blocks, transported through a pipeline infrastructure.

### The Sonils base

The BP Sonils office, warehouse and storage facility, opened in August 2007 on reclaimed land in the Sonils Logistics Integrated Services logistics base near the port of Luanda, houses BP's marine support services and freight forwarding teams. The team manages the supply of personnel and equipment to and from the FPSO and other offshore facilities and ships and administers logistics for all equipment used by the Angola business worldwide.

ALNG and the associated infrastructure represents a major oil industry investment in Angola.

## Operational performance

We are working to improve the reliability of our operations and making progress with our projects

### Operational performance

Total net production from our major fields in Angola was 170 thousand barrels of oil per day in 2010, a decrease on 2008 and 2009. This was caused by a combination of factors including planned, periodic shut downs of process units to perform maintenance, overhaul and repair operations as well as operational integrity challenges on the Greater Plutonio FPSO. There has also been lower production from fields operated by others.

#### BP Angola net production by major field

(thousand barrels per day)



### Block 18

In 2010, gross production from the Greater Plutonio FPSO totalled approximately 155 thousand barrels of oil per day. This figure reflects good initial performance, offset by a decline in production in the second half of the year caused by a number of major early life operational challenges with the FPSO. Chloride induced cracks in the water injection pipework, discovered during routine inspection, required a total water injection shutdown for a period of 11 months. The impact on production rates from the reservoir was significant, resulting in reduced rates of production. Corrosion in the high pressure gas cooling systems restricted operations from September 2010 to July 2011, necessitating a complex replacement project that was safely completed in June 2011.



### Block 31 developments

In 2010, we began the offshore stage of the PSVM project with the arrival of several vessels into Angola waters. Initial delays to the start of drilling operations on the Transocean operated drillship Discoverer Luanda occurred in 2010, but pile installation has now been completed and installation of the production flowlines has started.

Oil production from PSVM is scheduled to start in 2012. This forecast takes account of a delay to the completion of the FPSO in Singapore caused by commissioning problems with the gas turbine generators.



1 Drilling activity in Block 31  
2 DCV Balder installing subsea equipment

### Block 15 and 17 developments

Block 15 continues to provide successful production. A number of projects are planned for the next five years to maximise recovery from the resource base.

In August 2010, Total, as operator of block 17 (BP 16.67%), announced the development of the Cravo Lirio Orquidea Violeta (CLOV) project and the award of the principal contracts. This project is the fourth development in block 17, after Girassol, Dalia and Pazflor, and is located approximately 140 kilometres from Luanda and 40 kilometres north-west of Dalia in water depths ranging from 1,100 to 1,400 metres. The CLOV development will lead to four fields coming onstream. Drilling is expected to start in 2012 and first oil is expected in 2014. A total of 34 subsea wells are planned to be tied back to the CLOV FPSO unit, which will have a processing capacity of 160mbopd and a storage capacity of approximately 1.8 million barrels.

In 2010, gross production from the Greater Plutonio FPSO totalled approximately 155 thousand barrels of oil per day.

## The block 31 FPSO

April 2011 witnessed the naming ceremony for the “FPSO PSVM” – Floating, Production, Storage and Offloading vessel for BP’s Plutão, Saturno, Venus and Marte (PSVM) oil field development. The event was attended by more than 300 industry and stakeholder executives as well as VIPs from the Angolan Government, State Oil Company, Sonangol. All watched as the traditional bottle of champagne was broken across the bow of the FPSO at the Jurong Shipyard (JSL) in Singapore.

The occasion represented a major milestone for this major project which started in July 2008 with the arrival at Jurong of the VLCC Bourgogne for conversion into a state-of-the art FPSO. The next stage will be sailaway; from Singapore the vessel will transit across the Indian Ocean, pass the Cape of Good Hope and then north to Block 31 offshore Angola.

## Complex project

The PSVM Development is recognised as one of the biggest and most complex projects of its kind in the world. FPSO PSVM has a length of 355 metres, a width of 57m, a production capacity of 150 thousand barrels of oil per day and is able to hold 1.8 million barrels of crude oil for export. The vessel will be the first FPSO to be deployed in ultra-deepwater, in Angola Block 31.

## A focus on safety

One of the features of the project has been its focus on safety. BP has sought to ensure that the contractors involved in the project operated in line with BP safety standards. To this end, regular monitoring was introduced to monitor performance against a range of criteria including leadership commitment, resources, and inputs and outputs relating to safety.

BP Angola general manager Martyn Morris said: “The FPSO will be the heart of the first development to come on-stream in block 31. Both the PSVM development and its new FPSO are substantial projects by any standards.”

## Angola LNG progress

The Angola LNG project is progressing according to schedule (the overall project is 92% complete, plant 96% complete) with the first LNG cargo scheduled for February 2012.

ALNG is one of the largest energy projects in Angola with approximately 8,000 workers on the plant site at the peak of activity. At present, this number is just under 6,000. Throughout the project phase, approximately half of the workers have been Angolan nationals. The associated pipeline system is one of the longest (635km), deepest (1,450m) and highest pressure (370 bar) subsea pipeline systems in the world. The pipeline system includes the BP operated project to install the 74 km Gas Export Line, which will enable the export of gas from the

Greater Plutonio FPSO to the new facility. The Gas Export Line is planned to be commissioned in late 2011. Gas from BP operated block 31 production will also be transported to ALNG, expected 2014.

As part of our investment in ALNG, we are contributing our 13.6% share of the \$85m in social projects (including a new 22 Megawatt power station and expansions to a school and hospital in Soyo), \$160m for community housing and approximately \$100m in various local infrastructure projects in and around Soyo. These projects, which will take place over a number of years, include a new road and bridge over the Cadal channel and other road upgrades and improvements to the airport in Soyo.



The FPSO will be the heart of the first development to come on-stream in block 31. Both the PSVM development and its new FPSO are substantial projects by any standards.

1 FPSO PSVM naming ceremony, Singapore  
2 FPSO PSVM, Jurong shipyard, Singapore

# Developing our people

To create a sustainable business in Angola and contribute to national development, we recognize the need to build the capability of local people, in an environment that provides opportunity for all staff

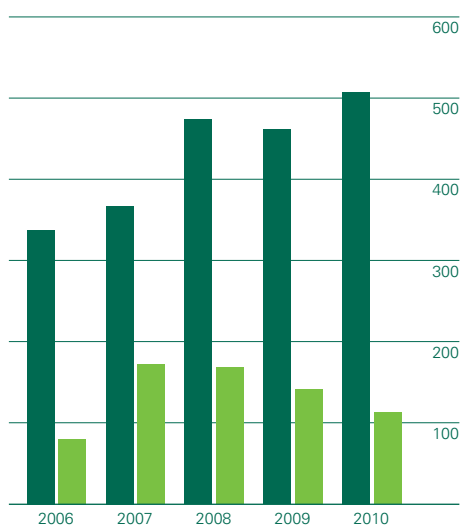
## Angolanisation

Across BP, we aim to ensure that our workforce reflects the local communities in which we operate.

Within Angola, this goal is reinforced by expectations and targets set by government for the recruitment, integration and training of Angolan nationals. Legislation enacted in 2008 introduced a wide ranging set of obligations on non-Angolan operators including evidence that local advertising for positions has taken place, additional compliance reporting on issues such as succession planning, and expectations relating to reward and benefit equalization between Angolans and non-Angolans. In May 2011, new visa regulations, enacted by Presidential Decree, have been introduced which aim to restrict and control the entrance and permanence of non-Angolan workers in the country. In this legal environment, where hiring expatriates has become more difficult, it is critical for BP and other international oil companies to develop a local workforce. Our leadership team is now permanently based in

### BP Angola workforce: Angolanisation

■ Angolan nationals in BP  
■ Non-Angolan nationals based in Angola



Luanda and while we still have staff based in the UK, the majority of the workforce is located in country.

While approximately 80% of our total workforce in Angola are Angolan nationals, meeting the target percentages for Angolan employees set under the PSA remains demanding in a market in which the required skills are in short supply, and where competition for experienced hires is intense. Challenges in staff recruitment arise not only from the shortage of qualified staff in a fast-growing market, but also from the wider range of job opportunities becoming available as the economy diversifies and grows. It is essential for us to attract good quality applicants and offer them a career development path that is highly attractive.

Our Angolanisation programme therefore focuses on the quality of positions held by local nationals as well as the number of Angolans we employ. At present, 61% of our professional grade employees are Angolan nationals. We have also increased the representation of Angolans on the regional leadership team.



1 Meeting of BP employees  
2 Shorebase operators at the Logistics and Infrastructure Yard B

## A challenging labour market

Oil and gas represents Angola's principal source of revenue

Angola's oil and gas sector

Exploration and production operations involve advanced technology, requiring high technical skills and experience.

Offshore operations (compared with downstream activities) do not employ large numbers of people.

Goods and services are often procured globally, from international suppliers, meeting global standards.

Gaps between high expectations and what can be delivered can create business risk

Gaps

High economic and social expectations on the oil industry among the population and government authorities, increasingly backed by regulation.

An experience gap: even well-qualified individuals need sufficient on-the-job experience.

A demanding and competitive market

Labour market context

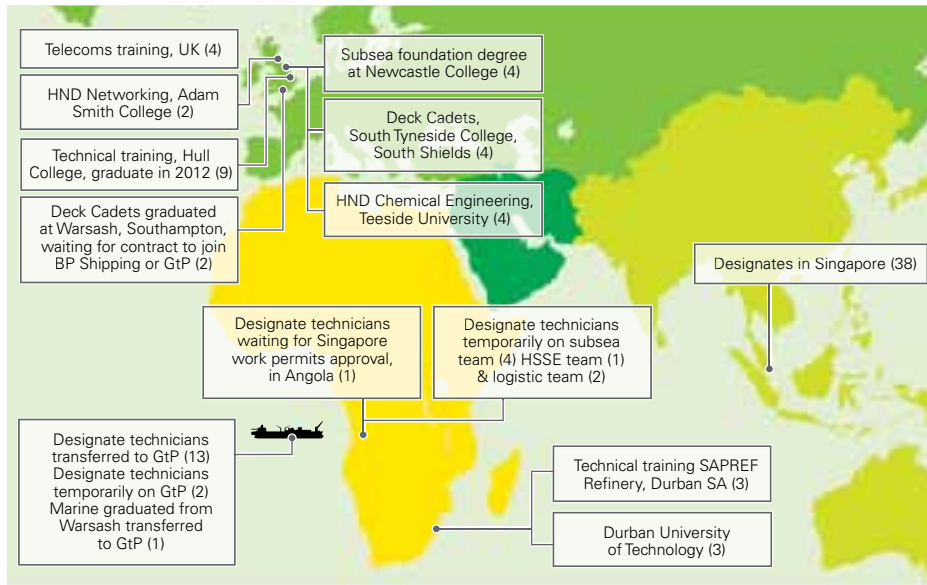
Insufficient numbers of local people with the petrotechnical skills and qualifications required.

An increasingly competitive labour market, in a diversifying economy, with a high cost base.

## Learning and development

Despite progress, the pool of labour in Angola contains insufficient technically-skilled people for work in the disciplines required of the oil and gas industry, particularly as the majority of our employees work in operational environments where petro-technical skills are essential. Our learning and development programmes enable Angolans and others to gain the experience we require of individuals before they assume operational and leadership positions. The programmes provide participants with a foundation of technical skills and development opportunities tailored to their needs. The schemes are an important part of how the knowledge transfer required by the PSA is achieved.

## Global Angola Technician Training Programme



### The offshore technicians programme

We continue to run our offshore technician programme, which was begun in 2001. It offers routes for study and vocational training to young nationals looking to make a career in the oil and gas industry. Trainees attend a 12 month intensive English language course followed by two to three years vocational training at BP facilities in the UK, South Africa, or on BP ships. The graduates provide a pool of qualified people to help meet future BP demands. We estimate that nearly 85% of the current Angolan technician population came from the technician programme pool.

### The Challenge programme

BP's Challenge programme for graduate entrants to the company provides a competence-based, globally inclusive framework that enables participants to acquire BP's common foundation skills. The programme typically lasts three years during which challengers are given stimulating work placements with guidance from technical coaches who help them gain competencies and development opportunities. We have 54 challenge graduates working for BP Angola, of whom more than half are based in Angola.

### Core training

In addition to these development programmes, core training is provided within technical disciplines such as human resources, finance, subsurface, drilling and completions, health, safety, security and the environment. In our procurement and supply chain management function, for example, an innovative programme is helping BP Angola's professionals to gain internationally recognised qualifications.

### Retention

Our staff turnover rate was approximately 8% in 2009, and 5% in 2010. To retain our staff and improve engagement with them, we are working to tackle concerns over career progression for Angolans and on managing lifestyle changes for expatriate staff. We improved a scheme that supports local employees to gain access to housing in 2010 as part of our efforts to create an attractive employment offer to employees.



### Mentoring

"As Vice President for BP Angola Legal, one of my most important responsibilities is ensuring that we build a strong Angolan legal team. If BP's business in Angola were a UK listed company, we would be large enough to be in the FTSE Top 30. Our lawyers therefore need to be capable of managing the legal risks of a comparably sized business but one based in a much more challenging operational and regulatory environment.

Since there are few Angolan lawyers with the requisite qualifications and experience we seek, we need to grow rather than hire our talent. We send our lawyers to internal and external training courses and encourage them to study at highly regarded law schools in the US or UK. We remain mindful that on-the-job training is the best way to learn. I therefore spend a lot of my time reviewing the work that comes in and making sure our Angolan lawyers are involved in a meaningful way by shadowing more experienced expatriate lawyers. As they gain confidence, they act as primary lawyers for progressively more complex projects. We rotate legal assignments every year so that all lawyers gain experience in our main practice areas. Through our 'Each One Teach One' system, each lawyer moving to a new practice area is responsible for coaching and mentoring the incoming lawyer. In addition, each lawyer works with me on one aspect of management (budgeting; regulatory filings; client counseling) on a rotational basis so that the team is prepared to manage themselves. Finally, we send our most promising lawyers on overseas assignments.

This is one of the most rewarding parts of my job. I'm thrilled that two of our lawyers have won prestigious scholarships to study in the US. These efforts are serving as a model for developing legal talent in our other emerging locations.

### Karin Sinniger

Vice President, BP Angola Legal team



## Our code of conduct

Our aim of having an open working environment in which everyone is treated with respect and dignity is underpinned by the BP code of conduct. The code sets out standards of behaviour for employees, contractors and suppliers. With clear and concise rules on topics such as safety, child labour, workplace harassment and political activity, it is designed to help them do the right thing in a complex business environment. We have put in place a thorough programme of monitoring and reporting in Angola to drive high levels of awareness and compliance with the various aspects of the code.

### Code of conduct

#### Health, safety and environment

Rules for a safe and secure workplace and a responsible environmental impact

#### Employees

Expectations for employee behaviour, from respectful treatment of co-workers to our policy on child and forced labour

#### Business partners

Guidelines on the giving and receiving of gifts, how to avoid conflicts of interest and other topics

#### Governments and communities

How we interact with governments and communities from preventing bribery and corruption to our policy on political activity

#### Company assets and financial integrity

Guidance on how to protect the physical, intellectual property and financial assets of BP

The code requires that our employees or others working on behalf of BP do not engage in bribery or corruption in any form in both the public and private sectors. We support this requirement by carrying out face-to-face and web-based anti-bribery and corruption training for employees in Angola and have extended this training to some of our contractors.

The code also forbids employees from making, offering or promising to make a payment or transfer anything of value (including the provision of any service, gift or entertainment) to government personnel or other officials for the intention of improperly obtaining or retaining business, or for any

The oil and gas Masters of Law programme we have supported at Agostinho de Neto University contains a module on ethics and social responsibility, designed to demonstrate the benefits of conducting business in an ethical and transparent fashion.

other improper purpose or business advantage. This position also applies to third parties acting on BP's behalf, including agents. To systematically monitor compliance with the BP Angola gifts and entertainment policy, we regularly analyze the number of gifts accepted and declined and their value.

The code also highlights BP's policy of not permitting facilitation payments (payments made to secure or speed up routine legal government actions, such as issuing permits) even if these payments are nominal in amount. We take a zero tolerance stance towards bribery and corruption, including facilitation payments.

We take steps to develop a culture of transparent business dealings in our own activities and in the wider business context. For example, the oil and gas Masters of Law programme we have supported at Agostinho de Neto University contains a module on ethics and social responsibility, designed to demonstrate the benefits of conducting business in an ethical and transparent fashion.

As in previous years, we completed our internal ethics certification process in BP Angola in 2010 in which we ask team leaders to certify the extent to which they and their team members have complied with the code of conduct. The process provides an opportunity to reinforce with staff the boundaries within which we do business and to discuss concerns openly while also addressing compliance risk and breaches. The concerns raised were discussed, investigated if necessary, with actions taken to address them. This has included action relating to the creation of a respectful and harassment free working environment, where a number of breaches to the code were identified.

## Development story

Andre da Silva joined BP 2004, working in the company's Procurement and Supply Chain Management (PSCM) function. At an early stage, working in the UK, Andre was involved in the development of BP's worldwide procurement system. He also contributed to the development of process and procedures, providing the Angola perspective to the PSCM handbook.

Having gained core procurement experience alongside an experienced practitioner in operations, Andre went on to complete Chartered Institute of Purchasing and Supply (CIPS) training, participating in a course which BP created with CIPS in the UK to give people the opportunity to gain an internationally-recognised professional qualification. "The course was challenging, but because it was customised for BP, it dealt with practical scenarios that were closely linked to real work experience", says Andre. "Obtaining the professional qualification enabled me to go on to do a Masters in Procurement and Supply Chain Management at Glamorgan University in Wales, where I graduated in July 2011".

Andre now manages a team in offshore procurement, with responsibility for about half a billion dollar spend per year.

"BP is a company that makes things happen if you want them to. There are lots of opportunities. What you have to do is go and find the opportunities, and the company will be very supportive as you pursue them".



# Safety

BP is developing and implementing a comprehensive programme to strengthen safety, risk management and compliance

## Safety management

We have taken wide-ranging steps to respond to the Deepwater Horizon incident

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## Safety performance

We continue to strive for improvements in process and personal safety

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## Progressing towards OMS

We are introducing BP's operating management system to drive a systematic approach to safety and risk management

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## Safety management The lessons we have learned from the tragic events in the Gulf of Mexico in 2010 are being applied in Angola

### Safety management

We recognise that BP's ability to operate safely has been called into question, and we are taking steps to strengthen the safety culture throughout our business, including here in Angola where we undertake exploration and production activities in deepwater environments which pose significant technical and operational challenges.

### Our response to the Deepwater Horizon accident

As part of the response to the incident, our local management team in Luanda regularly contacted officials from the government and Sonangol to inform them of developments. The Angola business contributed the time and expertise of a number of personnel, temporarily re-locating staff to the Gulf coast region as part of the emergency response. In Angola, we subsequently ran a series of workshops to discuss the lessons learned, involving Ministry officials, Sonangol, and industry organisations. These events were welcomed by the participants.

In addition to these immediate actions, we initiated a long-term programme of change covering organisational, procedural and cultural themes across the whole of BP. As our activities in offshore Angola are undertaken in challenging deepwater environments with similarities to those of the Gulf of Mexico, we reviewed aspects of our operations and emergency response capability.



**Manuel Xavier Junior**

Angola Ministry of Petroleum

"The forum held in November 2010 in Angola about the Macondo incident was very useful. We were pleased that BP had brought in specialists who had been involved in the incident and response, and that they also had the opportunity to discuss other operations in other countries such as Brazil and Norway. My colleagues and I found it a valuable meeting".

### Well capping trial in Angola

A new procedure to cap deepsea wells in an emergency was trialled by the Angola subsea operations team in May 2011. The capping plan is just one aspect of the wider BP response following the Deepwater Horizon accident. The top priority is to prevent accidents and to enhance planning for a spill, should one occur, including the planning of contingent relief wells and upgraded oil spill response and crisis management plans.

The new well capping device was tested on the Venus 1 wellhead in a water depth of more than 2,000m in Angola's block 31.

The capping device is a modified subsea assembly of valves, spools, and fittings used to control flow. It was lifted back on board the oilfield subsea construction vessel Seven Seas after the operation.

This means that the regional well capping plan is now live and able to be deployed offshore Angola, should it ever be required. The ground breaking project, the first in BP and the first for any oil company working in Angola, marked the culmination of five months' work by BP Angola, supported by key contractors, Subsea 7, Oceaneering, FMC and Cameron.

### Multi-disciplinary effort

The project was supervised by Subsea 7 who co-ordinated the multi-disciplinary effort needed to produce the plan. The capping device was based on a concept from Don Allan, a BP wells subsea team leader, and

fabricated and assembled by Cameron and FMC at the Sonils base in Luanda.

The plan provides for the capping device to be landed out onto the top of a blowout preventer from which the top part has been removed. The Venus 1 wellhead was selected for the trial because it has an identical connector size to that of the Discoverer Luanda blowout preventer.

The BP subsea operations team's support vessel, Russell Tide, deployed a Remote Operated Vehicle (ROV) to lock the well cap connector to the wellhead and to carry out post-closure monitoring of the operation. When the device had been carefully seated onto the wellhead and locked in place, the Russell Tide and the ROV closed the well bore caps and then activated the system to power-up the well cap. Once the test had been satisfactorily concluded, the process was reversed and the device recovered to surface.

### Complete capping plan developed

Over the five-month period leading to the successful tests, a complete six-part capping plan was developed, consisting of plans and procedures, a seabed survey, subsea injection of dispersant, debris clearance and site preparation, well capping operations and post well shut-in surveillance.

The development of phase two of the plan will include the provision of equipment to accommodate the second rig, the Deepsea Stavanger, which will resume development drilling in block 18 later this year.



Capping stack subsea acceptance test team onboard Subsea 7's vessel, "Seven Seas"

## Safety systems and performance We seek to deliver excellent safety performance by taking a rigorous approach to the management of risk

### Oil spill preparedness

We have considered oil spill response preparedness, participating in the September 2010 Angola National Oil Spill Contingency Plan workshop run by the International Maritime Organisation (IMO) and the International Petroleum Industry Environmental Conservation Association (IPIECA). We have carried out an emergency response exercise to ensure our incident management team is as well prepared as possible for a possible incident.

### Emergency response exercise

The aftermath of the Macondo well disaster has highlighted the need for preparedness in conducting emergency response operations offshore.

In May 2011, a joint emergency response exercise entitled 'Discover' took place in Angola, with the participation of the BP Angola Incident Management Team (IMT), the Business Support Team Leader on duty, SonAir (the aviation branch of Sonangol), and Helicopter Malongo (an aviation operator). The exercise also involved the Angolan aviation authorities INAVIC (Angolan Institute of Civil Aviation) and ENANA (Angola Institute for aviation operations) as observers.

The impetus behind the exercise was the implementation of the BP Angola incident management plan, which sets out roles and responsibilities, defines objectives and priorities, gives notifications, and determines the potential of an incident. The exercise was also used to provide new IMT members the opportunity to put into practice the training they have received.

Specifically, the exercise sought to test:

- Son Air mobilization and airborne search capabilities
- Helicopter Malongo rescue capability deploying HERDS (Helicopter Emergency Response Deployment System) in combination with marine vessels
- The interface between BP Angola IMT, Heli Malongo and SonAir response times for all support resources.

The event involved the use of marine vessels, a Son Air Beech 1900D fixed wing for search, two Sikorsky S76C++ helicopters (one

### Safety and operational risk

As part of our longer-term response to the Gulf of Mexico incident, we have introduced a more powerful safety and operational risk (S&OR) function across the organisation. We have put this structure in place in Angola, deploying representatives of the function within the business. The business line will continue to be accountable for delivering safe operations, but independent S&OR professionals hold the authority to guide and, if needed, intervene in technical and operational



Abilio Caleia and Yolanda Gomes during an emergency response exercise

that deployed HERD), people on the ground at the supply bases at Sonils and Soyo, the aviation operations team and the BP IMT and emergency response room.

On conclusion, members of each observing authority were invited to comment on BP's facilities and capabilities.

"We have learned a lot from what we have seen here today. We will take the lessons and will draft a plan for collaborative work on a national response plan. We look forward to having your support in order to set the National response centre," said Raul Neto, ENANA Planning Adviser.

The INAVIC representative, Felix Neto, said: "What we have seen here is something I have never seen before and I encourage BP to keep-up the good work they are doing in getting ready for any emergency. I will convey the message to our headquarters and draft a plan to work with BP on a programme with all parties involved".

activities. S&OR staff will also monitor operations with the aim of making sure that operations comply with the group's operating management system.

We have also strengthened our approach to risk management. Across BP, risk management consists of an entire system of standards, processes, tools and methodologies to identify, monitor and manage risk. In Angola, we have implemented the BP group defined practice on the assessment, prioritisation and management of risk. The procedure defines roles and responsibilities, sets out processes for identifying, assessing and responding to risks, and includes provision for regular risk reviews. Operating units carry out bottom-up risk reviews, and the regional leadership review the overall risks to the business on a regular basis.

### Business restructuring

In line with the group-wide organisational restructuring, we have reorganised our business in Angola into three separate divisions: Exploration, Developments and Production. This is intended to enhance the way the upstream business operates, with a particular focus on how we manage risk, deliver common standards and processes and build human and technical capability for the future.

### Safety performance

Our recordable injury frequency of 0.07 – which measures the number of injuries to the workforce per 200,000 hours worked – showed a continuation of the improved performance we have achieved in recent years. There were no fatalities in our operations in 2010.

We continue to concentrate on process safety, which involves applying good design principles along with robust engineering, operating and maintenance practices. In our risk assessment process, we identify and develop mitigation plans for process and major accident risks. This covers enduring risk areas that arise from drilling and completions activities, such as loss of hydrocarbon containment, and other production risks inherent in aviation and marine activities and oil spill response.

Road traffic incidents are a significant cause of fatalities in Angola. Driving is a high-risk activity, with many roads in poor condition and awareness of road safety low. The risk is particularly high because our

workforce has travelled, on average, approximately 2.8 million km per year over the past five years. Our total vehicle accident rate, which measures vehicle accidents per one million kilometres driven, has fallen significantly since 2008. However, one third-party pedestrian was fatally injured in an accident involving a BP-owned vehicle in 2010. Our drivers carry out defensive driving training every two years and we use an automated driving information system to monitor our drivers' behaviour.

### Progressing towards OMS

In common with other assets across the group, BP Angola is introducing an operating management system (OMS), a framework to drive a rigorous and systematic approach to safety, risk management and operational integrity across the company.

The OMS integrates requirements regarding health, personal and process safety, security, environmental and operational reliability, as well as related issues such as maintenance, contractor relations and organizational learning, into a common system. BP firmly believes that the OMS provides the right foundations to achieve operational excellence.

Following a safety and operations audit in 2009 on Greater Plutonio and an initial OMS gap assessment held in 2009-10, our progress in implementing OMS was interrupted by the temporary transfer of key staff to help with the response effort in the Gulf of Mexico. To move forward, we plan to refresh the gap assessment and progress with implementation in the structured and calculated manner which the events of 2010 made impossible. The gap assessment will deliver a new project plan and schedule for implementation, beginning in 2012. Implementation will be phased and will be risk-based. The system will be audited by BP group S&OR auditors towards the end of 2012, in line with the three year cycle of scheduled audits.

### Contractor oversight

We have long recognised the importance of building safety capability and raising safety awareness among our contractors and suppliers. Many of our operations, including deepwater drilling, rely on the expertise of contractors. Across BP, we are reviewing how we work with contractors and other industry partners, onshore and offshore, to inform future

relationships and address the oversight and management of safety and operational risk.

In Angola, we have held workshops with our contractors that bring together management from the contracting companies to share best practice on health, safety and environment and discuss lessons learned from incidents.

### Protecting health

Maintaining the health of employees is an important consideration in delivering safe operations. As part of our annual plan for promoting health, we have implemented policies and procedures covering the main health risks for our employees such as fitness for task, malaria, HIV/AIDS and substance misuse.

Although UNDP statistics indicate that the mortality rate from malaria in Angola decreased from 2005-09, the disease remains the biggest natural threat to life in Africa, with the most dangerous form of the disease present in the country. Our malaria management plan describes how BP Angola seeks to reduce the health risks to our employees, their dependants, contractors and business visitors from exposure to malaria while working, living or visiting Angola. Its measures include managing exposure to malaria risk through education, bite prevention, and the provision of anti-malarial drugs.

An important part of our effort involves building the capacity of local staff in occupational health and industrial hygiene. To do this, we are following an international modular framework for the training and capability development of industrial hygienists in BP Angola. Students can choose to take courses in fields such as the measurement and control of hazardous substances, and noise assessment and control, aiming for stand-alone qualifications in areas of specific interest and relevance.

**BP Angola is introducing an operating management system to drive a rigorous and systematic approach to safety, risk management and operational integrity.**



Paulo Pizarro, BP Angola Vice President, Communications and External Affairs and Inocencio de Brito, Angola Director of Traffic Police

### Improving road safety

In December 2010, BP Angola, the National Department of Road Traffic Police (DNVT), and Sete Caminhos (a local marketing agency), signed a Memorandum of Understanding (MoU) to implement a road safety campaign in Angola.

BP Angola decided to support a road safety programme in the light of the current figures for road accidents in Angola. Road traffic accidents represent the second most significant cause of death after malaria in the country. The campaign was focused on the festive season, when the frequency of road traffic accidents tends to increase.

The aim of the campaign was to reduce the number of fatalities, injuries and property damage resulting from road accidents in Angola, by raising awareness of road safety through television and radio spots aired during the festive season, as well as outdoor advertising strategically placed in areas with more accidents.

BP Angola Vice President for Communications and External Affairs, Paulo Pizarro, said: "It is an honour to participate in this initiative as it will help save lives and make our roads safer. We believe that most of the road accidents, if not all of them, are preventable. We train our drivers and maintain our cars, which helps us to manage the road safety risks for our employees and their families. By supporting DNVT with a wider road safety campaign as well as other road safety initiatives, we hope to contribute significantly to reducing the number of road accidents in Angola."

While it is difficult to attribute outcomes directly to an initiative of this type, we were pleased to see that the number of fatal road traffic accidents during the Christmas and New Year period in 2010 was 30% lower than the corresponding period in 2009. The total number of accidents was 25% lower.

# Environment

We seek continuous improvement in our environmental performance and are committed to continual reduction of our risks

## Managing our impact

Our HSSE policy sets out our aspirations for HSSE performance

Page 21



## Objectives and targets

We set annual environmental targets to help drive improvements in our performance

Page 22



## Performance

We measure and report on our performance on air emissions, waste management, discharges to water, oil spill response, noise and biodiversity

Page 22-23



## Environmental management BP Angola places the utmost importance on managing the environmental impact of all its activities

### Managing our impact

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

Potential environmental impacts from our activities fall mainly in the following areas:

- Waste generation, management and disposal: hazardous and non-hazardous wastes are produced from operations at the Greater Plutonio FPSO, rigs and logistics sites.
- Operational discharges: these include drill cuttings generated when we drill into the seabed to construct a well. Mud or drilling fluids may adhere to the cuttings and when disposed at sea may settle down and deposit on the seabed. The main process discharge from the FPSO is warm seawater with traces of biocide from the seawater cooling system. From time to time, produced water may also be discharged, depending on the volumes produced and the status of the facilities.
- Air emissions: these are generated mainly from the combustion of fuels in power generation for drilling, marine vessels and the FPSO, well clean-up and testing operations and flaring.
- Accidental spills: If an incident occurs and oil or chemicals are released to the environment, those substances have the potential to pollute the waters and land, affecting flora and fauna as well as other users who depend on these resources.
- Underwater noise generated by our activities results from vertical seismic profiling carried out during drilling operations and regional seismic surveys. The noise induced in the water column can affect marine fauna. Potential effects on marine mammals and turtles are of particular concern.

To manage these impacts, BP Angola operates an environmental management system (EMS) which meets the requirements of the international standard ISO 14001:2004. It provides a systematic approach to managing environmental impacts and seeks to ensure that every practical step is taken to minimize those impacts. The system is externally certified and covers the Greater Plutonio production operations, all seismic, drilling and

supply base activities in BP Angola, and onshore office facilities.

Work will be done in 2011 to identify how the EMS will be incorporated within OMS. Risk reduction and continuous improvement are key elements of both systems.

We have been developing a more integrated approach to managing HSE compliance, using a systematic approach to identify legislation, assess its applicability, examine controls and assign actions.



Greater Plutonio FPSO plant area

### Health, Safety, Security and Environmental Policy

Everybody who works for BP Angola Region is responsible for the continuous improvement of our HSSE performance. We are committed to continual reduction of our risks.

Our goals are simply stated – **no accidents, no harm to people and no damage to the environment.**

We will operate all our facilities in the Region in a safe and efficient manner and care for all those on our sites or those impacted by our activities. We will continue to drive down the health, safety, security and environmental impact of all our operations by maintaining regulatory compliance, reducing waste, emissions and discharges, using energy efficiently and assuring a safe work environment for our workforce.

We will lead our organization in the Region to:

- **Systematically** apply the Operating Management System (OMS) to all our operating activities to continuously reduce risk and deliver performance improvement in a safe, compliant, and environmentally and socially responsible manner
- **Identify, manage and mitigate** risks in all of our activities through a rigorous risk management process and intervene when 'emerging risks' become apparent
- **Comply** with all applicable legal requirements and company policies and procedures
- **Consult, listen and respond** openly to our customers, employees, local stakeholders, 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
- **Sustain OMS** to enable safe, compliant, responsible and reliable operations and review the effectiveness of the system at least annually

Our business plans include measurable HSSE targets. We are all committed to meeting them. Our OMS contain information on our organization, how we set and communicate our HSSE objectives and how we monitor performance.

Working safely and complying with all applicable legal requirements is a condition of employment. Staff and contractors must not tolerate deviations from legal requirements, nor the existence of unsafe acts, behaviours or conditions. All who work for and with BP are obliged and have the authority to stop work they consider unsafe or that contravenes legal requirements.

#### Martyn Morris

Regional President BP Angola Region

May 2011

# Environmental performance Everyone who works for BP Angola Region is responsible for the continuous improvement of our environmental performance

## Objectives and targets

BP Angola is committed to continuous environmental improvement. To help achieve this, we set annual objectives and targets. When setting these objectives, we concentrate on our most significant environmental impacts.

We summarize below our performance in 2010 and our targets for 2011. Target setting takes account of risks, legal requirements, and our specific business circumstances. More detailed information on our environmental performance is provided in the performance data table within this report.



Deploying Remote Operated Vehicle (ROV)

## Performance

### Air emissions

Our routine emissions to the atmosphere result primarily from FPSO power generation, drilling and vessel operations. There is also some flaring from the FPSO and our well operations during well testing and clean-up operations. Production operations lead to occasional emissions from venting due to tanker loading. Our policy is for the FPSO at Greater Plutonio to operate without flaring during steady operations. However, there may be intermittent flaring during start-up procedures and when the gas compression facilities are unavailable to allow production to continue from the complex subsea system that cannot be readily stopped and re-started. The emissions from these sources include carbon dioxide, methane, non-methane hydrocarbons, and oxides of nitrogen and sulphur (NOx and SOx).

Our emissions to air, the majority of which come from the FPSO, have been tackled principally through the design of the facility and process. Gas compression and reinjection facilities seek to avoid the need to dispose of associated gas to flare. Under normal operations, we have the ability to recover flare gas through a flare recovery system. This excludes flaring required for safe operation of the facility such as during major process upsets. The BP Angola flare policy is designed to manage flaring in day to day operations.

Carbon dioxide (CO<sub>2</sub>) is the principal greenhouse gas involved in climate change, and reducing CO<sub>2</sub> emissions is therefore a serious concern. Our equity share greenhouse gas emissions totaled 1,162,490 tonnes CO<sub>2</sub> equivalent in 2009 and 1,055,204 in 2010. A number of factors contributed to the decrease in emissions, including changes relating to equity share and variations in production, fuel gas use, flaring and drilling activities across the four blocks. Within this total, our equity share GHG emissions from the Greater Plutonio FPSO increased from 349,652 tonnes in 2009 to 396,384 tonnes in 2010, predominantly as a result of increased flare rates, caused by start-up and shut-down operations.

Non-greenhouse gas emissions of SO<sub>x</sub> and NO<sub>x</sub> decreased from 2009-2010. Lower drilling activity in 2010 resulted in lower diesel usage and consequently lower emissions of SO<sub>2</sub>. NO<sub>x</sub> emissions also declined.

## 2010 performance and 2011 targets

Area	Target for 2010	Performance	Target for 2011
<b>Standards and policies</b>	All environmental management system plans and procedures updated	<span style="background-color: #4CAF50; width: 100%; height: 15px;"></span>	Prepare required statutory plans for the DSS rig and PSVM FPSO Secure regulatory approval for license for new rig DSS and PSVM FPSO Enlarge EMS scope to include PSVM FPSO
<b>Chemical management</b>	Dowell Schlumberger audit completed	<span style="background-color: #4CAF50; width: 100%; height: 15px;"></span>	Conduct supplier assurance of chemicals management (D&C)
<b>Waste management</b>	Feasibility study produced to reduce logistics cost associated with waste management	<span style="background-color: #4CAF50; width: 100%; height: 15px;"></span>	Ensure accurate waste reporting including purchase of digital or mechanical scale for weighing the wooden waste for recycling
	Increase wood and metal recycling by 20% from BP facilities	<span style="background-color: #4CAF50; width: 100%; height: 15px;"></span>	
	Implement Angola SPU 2010 monthly waste dashboard	<span style="background-color: #4CAF50; width: 100%; height: 15px;"></span>	
	Produce waste handling plan for Discoverer Luanda drill ship	<span style="background-color: #4CAF50; width: 100%; height: 15px;"></span>	
<b>Operational discharges</b>	Improve waste tracking at Sonils, to reduce non-conformances with waste transfer notice protocols	<span style="background-color: #4CAF50; width: 100%; height: 15px;"></span>	Ensure compliance with new regulatory requirements of revised Executive Decree 12/05 (if new law is published)
	Enhance waste management practices and submit updated waste management plan to Ministry of Petroleum	<span style="background-color: #FFD700; width: 100%; height: 15px;"></span>	
	Improve the amount of correct waste segregation offshore	<span style="background-color: #FFD700; width: 100%; height: 15px;"></span>	
<b>Seismic</b>	Implement a leaks and seeps programme for the FPSO by 4Q 2010	<span style="background-color: #FFD700; width: 100%; height: 15px;"></span>	—
	Reduce reportable oil in water exceedances of greater than 60ppm (daily average)	<span style="background-color: #4CAF50; width: 100%; height: 15px;"></span>	
<b>Awareness</b>	Comply with regulatory requirements of Decree 51/04 before start-up of seismic activity	<span style="background-color: #4CAF50; width: 100%; height: 15px;"></span>	Deliver EMS, waste management, and ISO 14001 training (Sonils base) Deliver EMS training to new rig (DSS)
<b>Awareness</b>	Deliver EMS training to Drilling and Completions	<span style="background-color: #4CAF50; width: 100%; height: 15px;"></span>	

Completed or progress in accordance with plan  
 Achieved partially or later than planned: some concerns over ability to deliver



BP Angola's principal operations are located offshore, more than 100 kilometres from any centres of population. The predictive models we used during the project design phase looked at the potential impact of our operations on air quality onshore. This analysis found that the operations do not have any significant impact on air quality on the Angolan coast.

### Waste management

We manage our waste through operational controls, setting objectives and targets, monitoring and auditing and conducting research or investigations when necessary.

Our waste management strategy, implemented through waste management and handling plans at a facility level, seeks to ensure that we meet regulatory requirements and follow acceptable industry practices.

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

We endeavour to implement the waste hierarchy of reducing, re-using and recycling waste from our operations in Angola. The amount of non-hazardous waste disposed decreased from 1,147 tonnes in 2009 to 426 tonnes in 2010, primarily as a result of lower levels of drilling activity in block 31. The amount of hazardous waste disposed also decreased in 2010.

Where it is not feasible to implement waste reduction, BP strives to re-use certain waste streams. For example, we are donating waste wood from our operations in support of a local community project. Where re-use is not practical, we aim to recycle wastes. We regularly examine the market to find new options for scrap metal recycling.

### Water discharges

Within BP Angola, 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, once-through cooling water discharges and rain water run-off. We also manage produced water and have the ability to treat and re-inject it into the oil reservoir for reservoir pressure support.

We monitor the amount of oil in produced water, and set daily and monthly

average targets for reducing these levels. We also monitor and report on the number of oil in water excursions (defined as occasions when we exceed our desired levels for oil in water). We reduced the number of oil in water excursions to 21 in 2010, compared with 48 in 2009. However, the total volume of produced water discharged to the sea has increased since 2008.

### Losses of primary containment and oil spills

There were 15 losses of material from primary containment (LOPC) in our activities in 2009, 14 of which occurred in operations and one during exploration and appraisal activities. Of these LOPC incidents, the quantity of the largest oil spill amounted to approximately 208 litres. In each case, we assessed the actual and potential severity of the loss and developed actions to prevent reoccurrence. There were no LOPC incidents in 2010.

### Spill preparedness

We have been enhancing our oil spill preparedness and response capability following the Gulf of Mexico oil spill. Initiatives have included the development of offshore and coastal environmental and socio-economic maps, integrated into a geographic information system (GIS) database, to identify sensitivities along the Angolan coast where there is potential for oil spill impact. We will be building on this work in collaboration with the Angolan Committee of Exploration & Production Association (ACEPA).

We have also updated our oil spill modeling results – examining where oil spilled offshore might reach land, and how long it may take to reach the shore.

### Noise

To mitigate and avoid negative effects from noise on marine fauna, BP has implemented strict noise controls at all its seismic operations. This includes having marine mammal observers on board the sound source vessels, making provision for stopping operations when vulnerable fauna are present in the area and introducing safe operational practices such as soft starts.

### Monitoring and protecting biodiversity

We are collaborating in a research partnership to improve understanding of the deepwater environments of Angola where exploration and production is taking place.

The deep-ocean long-term observatory



Aerial view of Greater Plutonio FPSO

system project, is an initiative involving Sonangol, SSI and representatives from several international universities and scientific institutions, including the Angolan Institute of Fisheries Research. The project aims to measure and monitor deep sea biological communities and oceanographic conditions, understand the pace of recovery from any unforeseen impacts and differentiate between natural and man-made changes. The project uses two sophisticated monitoring platforms positioned in water depths of some 1,400 metres, serviced by remotely operated vehicles.

Following initial operational challenges in which the new technology was bedding in, we are now receiving results from the observatory and are building a comprehensive data set that will enable analysis to begin.

# Society

Our goal is to support the broader development of Angola with social investment initiatives that promote and strengthen the capabilities of local people and institutions

## Our social investment strategy

Bringing tangible benefits to the country by supporting human development in the community

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## Our partnership approach

We work in partnership to develop projects that focus on community needs

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## Our social projects

We support a wide range of projects that support education and enterprise development, as well as addressing other themes including healthcare and the environment

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# Building capability

We work with a wide range of organisations in Angola with the goal of promoting the well-being and development of the country

## Our social investment strategy

Community investment aims to bring real benefits to the country by supporting human development in the community at various levels. This is done by engaging with stakeholders such as community and church leaders, the government, non-governmental organizations (NGOs), academics and others to find out how we can form partnerships that generate mutually beneficial outcomes.

Across all our spending, and in partnership with the oil industry as a whole in Angola, we are contributing to projects in diverse fields including support for public healthcare, donating medical supplies, school construction and enabling access to education. We try to make sure that our support complements the social welfare provision provided by the government and others including Sonangol, and reinforces efforts to tackle the UN Millennium Development Goals and other priorities.

BP Angola’s sustainable development and community investment programme has a primary focus on education and enterprise development. Our investment in people is consistent across diverse initiatives; we seek to promote education at various levels, boost the capability of local suppliers, reduce poverty and promote social inclusion and environmental conservation. This approach also increases local participation in our business activities and aims to improve the capacity of local communities to have a larger role in the improvement of the Angola economic and social environment – which are important factors for our shareholders and our continuing business success. Investment in skills is an underlying theme in the programmes that we support, promoting the well-being and development of the country.

BP Angola’s sustainable development and community investment programme has a primary focus on education and enterprise development.



Scouts at a BP funded library in Luanda



1 Pek Hak Bin, BP Singapore Country President receives a gift from the community in Dombe Grande, Benguela province

2 Farmers at a BP funded microcredit programme

## The Angolan social context

Angola achieved peace in 2002 after 27 years of armed conflict. Its socio-economic indicators provide an insight into the damaging impact of the conflict. However, from 2006-10, Angola recorded high levels of economic growth (including double digit growth by the end of 2008) and has made economic reforms with some success.

The Government of Angola has increased investment in education, health and infrastructure. According to the UNDP, Angola has made significant progress towards meeting the Millennium Development Goals. In the eyes of the UN, attaining them – in the light of recent trends and the country’s huge financial means – is a credible challenge.

However, despite the efforts made by the government and macro-economic stability, the country still suffers from visible poverty and acute social deficiencies. The Study of Population Wellbeing, carried out by the National Institute of Statistics in 2010, shows that 37% of the Angolan population still lives below the poverty line. The child mortality rate below five years of age is 193.5 per 1,000 live births. An estimated 41% of the population remain under-nourished. There is scarcity of qualified human resources at business and institutional level, which creates a serious problem for contracting qualified local labour.

This backdrop raises fundamental questions and challenges for Angolan society as a whole. It also enables BP Angola, within the scope of its social responsibility, to help improve living conditions for communities across the country.



**Jose Patricio**  
Former BP country President, BP Angola

“BP is engaged in a very dynamic society here – a post-conflict environment that still faces significant social challenges. The company needs to have the capacity and the vision to make a difference. Here it is difficult to establish priorities, so it is important to understand the real aspirations of the people and to align with these trends”.

## Our partnership approach

We work in partnership with NGOs who help us by developing project proposals based on their knowledge of community needs and who can also act as project managers. We couple their views with our insight into community concerns. We also assist capacity building by supporting local institutions.

BP pays special attention to developing the institutional capacities of the organisations we work with when implementing projects. We seek to get the potential beneficiaries of our projects directly involved so that they have a direct stake and a role in making the projects work. Partnerships, therefore, play a vital role.

This approach differs from that followed by some other organisations and also marks a transition from the more directly interventionist approach which we pursued when the country's needs were different. We have moved away from direct intervention to encourage the participation of implementing partners, be they churches, community leaders, national and international government, non-governmental organisations, or public-private academic institutions.

## Evolution of our community investment approach

1996-2000	<b>Amoco Angola</b> Response to armed conflict Humanitarian aid, in response to Government appeals and institutions
2001-2005	<b>BP Amoco merger</b> Peace process and national stabilisation Diverse social projects, with direct intervention
From 2006	<b>BP</b> Building national capacity Partnership and collaborative projects, with clear focus on social needs

Projects financed by BP within our portfolio are identified and drawn up by implementing partners under framework guidance that we provide. The process involves a direct relationship between the parties in which BP evaluates the proposals and supports the partners in setting the goals and performance indicators.



Cheque donation to a children's centre in Benguela province (Aldeia SOS Crianca)

## Illustrative BP-supported projects

### The Enterprise Centre (CAE – Centro de Apoio Empresarial)

**Theme:** Enterprise development

**Objective:** To build the capacity of Angolan businesses to participate more actively and with greater success in the oil and gas industry – as key suppliers of quality products and services – in order to create jobs, promote skills transfer and achieve locally-based economic growth

**Status:** Implementation phase completed under BP management. The project has been managed by the Chamber of Commerce and Industry, funded by Sonangol, since January 2011.

**Financing:** Blocks 18 and 31 (from 2005-December 2010).

**Implementer:** CDC

**Partners:** Industry project managed by BP and funded by international oil companies operating in Angola and Sonangol.

**Location:** Luanda, Benguela, Soyo

**Beneficiaries:** Small and medium-sized Angolan companies.

**Duration:** 60 months.

**Results:** Since it was established, CAE has delivered 311 contracts between local Angolan SMEs and the oil industry, valued in excess of \$302 million; the creation of in excess of an estimated 4,200 jobs; training and consultancy services to approximately 1,530 companies.

### Training journalists (CEFOJOR)

**Theme:** Education

**Objective:** To contribute to the improvement of quality of training of Angolans through the modernisation of the Training Centre for Journalists and qualification of journalists in matters concerning the oil and gas industry

**Status:** Project in progress. IT and audio visual system modernised with Internet for training of students and journalists

**Financing:** BP 100%

**Implementer:** CEFOJOR

**Location:** Luanda

**Beneficiaries:** Journalists, CEFOJOR

**Duration:** 24 months

### Community internships

**Theme:** Education

**Objective:** To give Angolan university students the opportunity to work in various projects relating to human and social development in Angola. The aim is to provide students with valuable experience and to increase their awareness of issues relating to local communities, and social and institutional development.

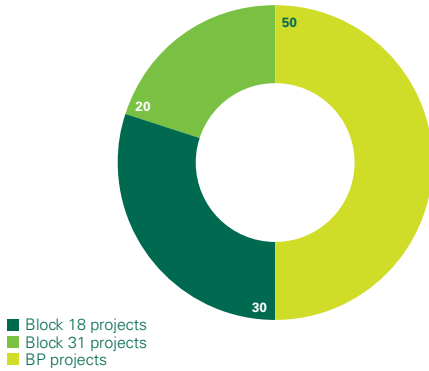
**Financing:** Block 31

**Implementer:** Development Workshop

**Location:** Luanda, Huambo, Cabinda, Zaire, Hula

**Beneficiaries:** University students and communities.

**Community project distribution 1996-2010 (%)**



**Our social projects**

From 1996-2011, we have supported the implementation of some 67 social projects which have a value in excess of \$28 million.

The examples provide a snapshot summary of a selection of BP supported projects, focused on the capacity building themes of education and enterprise development.

**Building local economic capacity**

Provisions within the production sharing agreement (PSA) seek to ensure that the social and economic benefits arising from our activities are shared for the country's good. For example, in conducting our operations, we have a requirement in the PSA 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 industry.

In 2011, BP Angola expects to spend more than \$350 million gross, with third-party suppliers. Some of the major PSVM contractors subcontract portions of their work to Sonangol joint ventures, in disciplines such as fabrication, for example. This expenditure represents a significant level of local content and contribution to the Angolan economy. These market sectors include:

- Air (SonAir)
- Marine (Sonatide, Sonasurf)
- Tubular goods (Sonaid)
- Supply base (Sonils)
- Fabrication yards (Sonamet, Petromar, PAENAL)
- Fuel distribution (Sonangol Distribuidora)

A number of flagship local content projects are well-established. At Porto Amboim, for example, a multi-jointing yard and marine supply base have been constructed. The work involved some 175,000 manhours. The facility is undertaking fabrication work for the PSVM project. At the Sonils base in Luanda, a Cameron wellhead manufacturing facility is under construction with the participation of several contractors.

In 2011, BP Angola expects to spend more than \$350 million gross, with third-party suppliers.

1 A welder at PAENAL Yard, PSVM project, Porto Amboim, Kwanza Sul province

2 Construction yard for PSVM Project in Porto Amboim



# Supporting education and enterprise *We focus on supporting education and enterprise to help build human capacity in Angola*



1



2

1 A farmer at microcredit programme in Bailundo, Huambo province

2 Produce from microcredit programme in Cubal, Benguela province

## Reproductive and health and social well-being education

Peace and improved infrastructure have increased the ability of people to move freely within Angola and among neighbouring countries. But it has also increased the risk of higher incidence of sexually-transmitted disease (STD). The lack of family planning and the increase in STDs such as HIV/AIDS can pose a significant barrier to improving human well-being and reducing poverty in Angola.

BP has entered into a partnership with Child Fund Angola and the Epongyio Lyomala Association to implement a reproductive health and sexual education project. Its aim is to strengthen the capacity of local health, education and community institutions in Lubango and address vulnerable populations on the topic of STDs and family planning.



Seminar on reproductive health in Huila province

## Microcredit

We have partnered with ADRA (Action for Rural and Environmental Development) and Banco Sol to implement a microcredit project in Huambo and Benguela provinces, a rural region that was heavily affected by the war in the 1980s and 1990s, with the aim of supporting the Angolan government in its poverty reduction programme.

We have also supported a microfinance project, launched in 2009 in the Soyo municipality in the province of Zaire. The Kixicredito project has sought to increase the income generation capacity and self-esteem of an economically poor sector of the population. In particular, the project has sought to help women involved in the informal sector of the economy by giving them access to microfinance.

An evaluation of the initiative has found that approximately 740 clients have been assisted by the programme, of whom about one-third are women. Disbursements under the scheme have totalled approximately \$1.1 million.

## Supporting education

We recognise the need to develop the physical infrastructure of school buildings and have supported the construction of a number of schools. However, we concentrate 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 the institutions



**Isaac Paxe**  
ISCED – Higher Institute of Education Sciences, Agostinho Neto University

“When BP is talking about sustainability, it should elaborate how education can be used as a tool for learners to gain access and contribute to the development of society. It is not just about building schools, for example – but about the quality of education and the skills children need to be integrated into society. ”

which can provide training and development into the future. We are supporting a health education and social well-being project in Lubango, described in the case study below.

## Supporting engineering and science

BP and University Agostinho Neto (UAN) signed a cooperation protocol in 2005 which aims to improve the quantity and quality of Angolan engineers and geoscientists trained in Angola.

The programme provides financial assistance for internal scholarships, funding for text books and laboratory equipment, funding for programmes to improve teaching skills, assist in curriculum revision activities, and finance for other education equipment, materials and facilities. In the past two years, this initiative has helped to significantly

increase the number of engineering graduates.

We have also partnered with the Academy for Educational Development (AED) to install a geographical information system laboratory and develop an applied professional users' course. In addition to training university teachers and students, the course is providing training for individuals from utilities and government bodies.

### Building legal capacity in oil and gas

We have also assisted the UAN Law faculty in establishing a Masters (LLM) programme in oil and gas law. BP has committed \$2.3 million to fund three sessions of the programme and also provided significant technical assistance. The course contains a wide range of modules including ethics and transparency, oil and gas technology, contracts, tax and environmental law. A total of 51 individuals graduated from first two sessions of the course, which is currently in its third session.

The objective of the LLM programme is to promote the training and education of specialists in the area of oil and gas law in order to create a group of qualified professionals who will adequately serve the interests of the Angolan people, of the State and of the petroleum industry, with the goal of making petroleum and gas contracts beneficial to all.



Francisco Simao, during his LLM graduation

## Students and teachers on our LLM programme



**Susana Ramos**  
BP Angola

"I was a student in the first year of the LLM programme. It was well organized, with a good balance between international oil industry experts and renowned sector professionals in Angola. The selection of participants was well done, creating a dynamic, engaging and supportive group. The main benefit was the opportunity to meet and socialize with other legal professionals working with the key players involved in oil and gas transactions: foreign and national oil companies; Sonangol; the Ministries of Petroleum and Finance; the Customs Authority. In an industry where relationships are important, it is crucial to have this interaction with professionals from all segments. Building my network was not only rewarding personally, it was also a valuable working tool. The LLM also made me aware of educational programmes offered by the US Department of State in developing countries, and to apply and to be selected to attend the Humphrey Fellowship Programme in America University in 2009-10."



**Onofre dos Santos**  
Judge in the  
Constitutional Court

"The LLM gave me the opportunity to sit at my age (68) as a student in an Angolan university and to learn about the regulations concerning a crucial natural resource of my country. The programme was served by brilliant and experienced teachers, from the UK, USA, Portugal, Brasil and from Angola. The LLM equipped me with knowledge supplementary to my former law practice and my current assignment as a Judge to the Constitutional Court, enhancing my perceptions of the economic and social evolution and development of Angola."



**Evanine Ramos**  
Geo-market Attorney,  
Schlumberger,  
Angola, Southern  
Eastern

"To speak about the Oil and Gas LLM programme is to talk about the programme that changed my life, giving it a path completely different from the one previously trodden and making it possible to begin a career in oil and gas law. To speak about it is to speak of the opportunities created by interaction with colleagues and professors both Angolan and foreign, of different ages and specializations (economists, engineers, lawyers), some having and others not having experience in the oil and gas sector. The LLM programme gives a wide view of the oil sector from the economic, political, contractual and social point of view. The course also permits the students to gain detailed knowledge of both Angolan and foreign oil and gas legislation, thus allowing the student to embark on independent comparative law analyses."



**Jacqueline Lang Weaver**  
A.A. White Professor  
of Law, University of  
Houston Law Center

"The opportunity to teach for a week at Agostinho Neto's LLM in Petroleum and Gas Law was a learning experience for me. The students were superb – both engaged and engaging. They knew the relevant Angolan laws and could combine their working knowledge of Angola's reality to actively compare their experiences to the best practices used in the international oil industry in sustainable development. Through minor blackouts and faltering air conditioning systems, they filled the classroom with active dialogue and knowledge and networking. For me, it was an unparalleled teaching and learning experience."

# BP Angola in figures

## Performance data

For the year ended 31 December	2006	2007	2008	2009	2010
Total hydrocarbons produced (mboed) (Op and non-op)	133	140	202	211	170

## Safety

For the year ended 31 December	2006	2007	2008	2009	2010
BP employee fatalities	0	0	0	0	0
BP contractor fatalities	0	0	0	0	0
Day away from work cases (DAFWC) <sup>a</sup> – workforce <sup>b</sup>	2	4	4	5	0
Day away from work cases frequency (DAFWCf) <sup>c</sup> – workforce	0.062	0.094	0.095	0	0
Recordable injuries <sup>d</sup> – workforce	8	18	15	9	3
Recordable injury frequency (RIF) <sup>e</sup> – workforce	0.25	0.42	0.35	0.2	0.07
Total vehicle accidents	78	31	30	39	23
Total vehicle accident rate (TVAR) <sup>f</sup>	23.3	9.3	14.3	14.8	7.9
Hours worked – workforce	6,433,581	8,545,184	8,549,274	8,986,787	8,344,661
Kilometres driven	3,340,962	3,346,010	2,102,528	2,639,650	2,917,951

## Environment

For the year ended 31 December	2006	2007	2008	2009	2010
Equity share direct carbon dioxide (CO <sub>2</sub> ) <sup>g</sup> – (tonnes)	484,666	940,541	1,208,764	1,162,490	1,055,204
Equity share indirect carbon dioxide (CO <sub>2</sub> ) <sup>h</sup> (tonnes)	0	0	0	0	0
Equity share direct methane (CH <sub>4</sub> ) (tonnes)	1,643	4,160	2,644	2,502	2,444
Equity share direct greenhouse gas (GHG) (tonnes CO <sub>2</sub> equivalent) <sup>i</sup>	519,169	1,027,811	1,264,288	1,215,032	1,106,528
Total gas flared (tonnes)	1,987	148,882	200,221	138,093	227,851
Sulphur dioxide (Sox) (tonnes)	108	232	206	259	98
Nitrogen oxides (NOx) (tonnes)	1,587	5,800	2,923	1,849	928.4
Non-methane hydrocarbons (NMHC) (tonnes)	260	825	6,210	4,789	6,766
Losses of primary containment <sup>j</sup>	–	–	33	15	0
Number of hydrocarbon spills <sup>k</sup>	0	0	2	1	0
Volume of product spilled (litres)	0	0	835.95	208	0
Volume of product unrecovered (litres)	0	0	635.95	208	0
Total hydrocarbon discharges to water (tonnes)	0	0	3.18	14.11	45.58
Hazardous waste disposed (tonnes)	673	1,054	768	1,070	1,035
Non-hazardous waste disposed (tonnes)	–	749	870	1,147	426

## Employees

For the year ended 31 December	2006	2007	2008	2009	2010
Angolan nationals in BP	337	367	473	461	507
Non-Angolan nationals based in Angola	80	172	168	142	113
Total	417	539	641	603	620

<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 anyway.

<sup>b</sup> The BP workforce comprises all BP employees, all BP contractors and all BP Directors.

<sup>c</sup> DAFWCf workforce: The number of injury DAFWCs to the BP workforce for every 200,000 hours worked in the same period.

<sup>d</sup> A recordable injury is an injury and illness incident that results in a fatality, a day away from work case, restricted work or job transfer, or medical treatment beyond first aid.

<sup>e</sup> RIF: The total number of Recordable Injuries to the BP workforce for every 200,000 hours worked in the same period.

<sup>f</sup> TVAR: Total Vehicle Accident Rate: the sum of all light vehicle and all mobile plant accidents per one million kilometres driven.

<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.

<sup>i</sup> Greenhouse gas emissions include carbon dioxide and methane (converted to the quantity of CO<sub>2</sub> that would create an equivalent warming effect).

<sup>j</sup> Loss of primary containment: An unplanned or uncontrolled release of material from primary containment.

<sup>k</sup> Hydrocarbon spill: An accidental or unplanned loss of hydrocarbon greater than or equal to one barrel from primary containment from a BP or contractor operation, irrespective of any secondary containment or recovery. (One barrel is equal to 159 litres, equivalent to 42 US gallons). Historic data has been revised to meet latest BP reporting definitions.



# Acronyms

<b>ACEPA</b> Association of Companies for Exploration and Production in Angola	<b>DELOS</b> Deep-ocean Environmental Long-term Observatory System	<b>IMT</b> Incident management team	<b>OMS</b> Operating management system
<b>ADRA</b> Acção para desenvolvimento rural e ambiente (Action for Rural and Environmental Development)	<b>DNVT</b> Department of Road Traffic Police	<b>INAVIC</b> Angolan Institute of Civil Aviation	<b>PSA</b> Production Sharing Agreement
<b>AED</b> Academy for Educational Development	<b>ENANA</b> Angola institute for aviation operations	<b>IPIECA</b> International Petroleum Industry Environmental Conservation Association	<b>PSVM</b> The Plutão, Saturno, Vênus and Marte fields
<b>ALNG</b> Angola liquefied natural gas project	<b>EMS</b> Environmental management system	<b>ISCED</b> Luanda Higher Institute for Educational Sciences (Instituto de Ciências da Educação de Luanda)	<b>S&amp;OR</b> Safety and operational risk
<b>BOPD</b> Barrels of oil per day	<b>FPSO</b> Floating Production Storage Offloading vessel	<b>LNG</b> Liquefied natural gas	<b>SME</b> Small and medium sized enterprise
<b>CAE</b> Centro de Apoio Empresarial (the enterprise centre)	<b>GIS</b> Geographical Information System	<b>Mboed</b> Thousand barrels of oil equivalent per day	<b>SPU</b> Strategic performance unit
<b>CCF</b> Christian Children Fund	<b>HIV/AIDS</b> Human Immuno-Deficiency Virus/ Acquired Immuno Deficiency Syndrome	<b>MoU</b> Memorandum of understanding	<b>UAN</b> University Agostinho Neto
<b>CDC</b> Citizens Development Corporation	<b>HSSE</b> Health, Safety, Security and Environment	<b>NGO</b> Non-governmental organization	<b>UNDP</b> United Nations Development Programme
<b>CNAL</b> Clube dos Naturais e Amigos dos Lonados	<b>ICRA</b> Institute of Religious Sciences of Angola	<b>NOSCP</b> National oil spill contingency plan	
	<b>IMO</b> International Maritime Organisation		

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# Independent assurance statement to BP management

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This report has been substantiated by Ernst & Young, the BP group auditors. The primary purpose of the report substantiation process is to test that the assertions, claims and data set out in the text regarding BP's sustainability performance can be supported by evidence. This process is intended to give assurance about the report contents from an independent third party. Ernst & Young's scope of work and their conclusions are provided below.

## Independent assurance statement to BP management

*BP in Angola Sustainability Report 2010* (the Report) has been prepared by the management of BP Angola, who are responsible for the collection and presentation of information within it. Our responsibility, in accordance with BP management's instructions is to carry out a limited assurance engagement on the Report as outlined below, in order to provide conclusions on the claims, data and coverage of issues within it.

Our responsibility in performing our assurance activities is to the management of BP p.l.c. only and in accordance with the terms of reference agreed with them. We do not therefore accept or assume any responsibility for any other purpose or to any other person or organization. Any reliance any such third party may place on the Report is entirely at its own risk.

## What we did to form our conclusions

Our assurance engagement has been planned and performed in accordance with the International Federation of Accountants' ISAE3000.<sup>1</sup>

The Report has been evaluated against the following criteria:

- Whether the Report covers the key sustainability issues relevant to BP in Angola in 2010 which were raised in the media, BP Angola's own review of material sustainability issues, and selected internal documentation.
- Whether sustainability claims made in the Report are consistent with the explanation and evidence provided by relevant BP managers.
- Whether the sustainability data presented in the Report are consistent with the relevant business unit level data records.

In order to form our conclusions we undertook the steps outlined below.

1. Reviewed a selection of external media reports and internal documents relating to the sustainability performance of BP in Angola in 2010, including outputs from stakeholder engagement.
2. Reviewed the outcome of BP Angola's own processes for determining the key issues to be included in the Report.
3. Reviewed information or explanation about the Report's sustainability performance data and statements. Whilst we reviewed documentation to support the sustainability data contained within the Report, we did not test the data processes for gathering, collating and reporting data at country or site level.

## Level of assurance

Our evidence gathering procedures have been designed to obtain a limited level of assurance on which to base our conclusions. The extent of evidence gathering procedures performed is less than that of a reasonable assurance engagement (such as a financial audit) and therefore a lower level of assurance is provided.

## Our conclusions

On the basis of our review and in accordance with the terms of reference for our work we provide the following conclusions on the Report. Our conclusions should be read in conjunction with the above section on 'What we did to form our conclusions'.

1. Does the Report cover the key issues?

We are not aware of any key sustainability issues relevant to BP Angola which were raised in the media or the outcome of BP Angola's own materiality process that have been excluded from the Report.

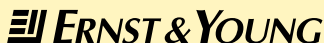
2. Are the data and statements regarding BP Angola's sustainability performance contained within the Report supported by evidence or explanation?

We are not aware of any misstatements in the assertions and data presented by BP management within the Report regarding BP Angola's sustainability performance.

## Our independence

As auditors to BP p.l.c., Ernst & Young are required to comply with the requirements set out in the Auditing Practices Board's (APB) Ethical Standards for Auditors. Ernst & Young's independence policies apply to the firm, partners and professional staff. These policies prohibit any financial interests in our clients that would or might be seen to impair independence. Each year, partners and staff are required to confirm their compliance with the firm's policies.

We confirm annually to BP whether there have been any events including the provision of prohibited services that could impair our independence or objectivity. There were no such events or services in 2010.



Ernst & Young LLP  
London  
November 2011

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<sup>1</sup> International Federation of Accountants' International Standard for Assurance Engagements Other Than Audits or Reviews of Historical Financial Information (ISAE3000)

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## Further resources

BP communicates non-financial commitments and performance at group, country and site levels online, as well as providing interactive tools for its website visitors

### Group reporting

Our website, [www.bp.com/sustainability](http://www.bp.com/sustainability), is an integral part of our group sustainability reporting, covering a wide set of issues and reporting on them in more depth. The website also includes detailed information about our environmental and safety performance.

BP Sustainability Review 2010 is available in English, Mandarin Chinese, Russian and Spanish.

[www.bp.com/sustainabilityreview2010](http://www.bp.com/sustainabilityreview2010)

### Country and site reporting

We publish country reports on our operations in Australia, Azerbaijan, Canada, Georgia, Germany, New Zealand, Southern Africa, Trinidad & Tobago and Turkey. We also maintain a library of site reports for more than 30 of our major operations.

[www.bp.com/countrysustainabilityreports](http://www.bp.com/countrysustainabilityreports)

[www.bp.com/site-reports](http://www.bp.com/site-reports)

### Case studies

Our case studies demonstrate our sustainability efforts in action around the world and provide insight into how our policies and practices can make a difference at the local level.

[www.bp.com/casestudies](http://www.bp.com/casestudies)

### 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](mailto:bpangola@bp.com).

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### [www.bp.com/angola](http://www.bp.com/angola)

This provides an overview of BP Angola's activities and investments, including a focus on our employees and partners, and community and social investment initiatives.



### [www.bp.com](http://www.bp.com)

This site contains information about the BP group including detail of its policies and values and reports on its activities and operations worldwide.

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### Paper

This Sustainability Report is printed on FSC-certified Mohawk Options 100%. This paper has been independently certified according to the rules of the Forest Stewardship Council (FSC) and was manufactured at a mill that holds ISO 14001 accreditation. The inks used are all vegetable oil based.



