

# Sustainability Report 2015



[bp.com/sustainability](http://bp.com/sustainability)

# Who we are

We aim to create long-term value for shareholders by helping to meet growing demand for energy in a safe and responsible way. We strive to be a world-class operator, a responsible corporate citizen and a good employer.

BP is one of the world's leading integrated oil and gas companies – based on market capitalization, proved reserves and production. Through our work we provide customers with fuel for transportation, energy for heat and light, lubricants to keep engines moving and the petrochemicals products used to make everyday items as diverse as paints, clothes and packaging.

We believe a mix of fuels and technologies is needed to meet growing energy demand, improve

efficiency and support the transition to a lower-carbon economy. These are the reasons why our portfolio includes oil, gas and renewables.

Our projects and operations help to generate employment, investment and tax revenues in countries and communities across the world. We have well-established operations in Europe, North and South America, Australasia, Asia and Africa and employ around 80,000 people.

## Front cover images

BP's onshore oil and gas activity in the US began operating as a separate business in 2015. Our Lower 48 onshore business spans 5.7 million acres with active operations in six states.



## About our reporting

This Sustainability Report and [bp.com/sustainability](http://bp.com/sustainability) concentrate on performance and activities from 1 January to 31 December 2015. We aim to report on all aspects of our business, including joint ventures where we are the operator. Where appropriate, we also seek to provide an overview of joint venture activities where we are not the operator, but where we have significant influence on our partners.

We validate the content with our external assurance provider, Ernst & Young, whose remit includes commenting on the prominence given to each topic and identifying any gaps.

We apply the Global Reporting Initiative's G4 guidelines, and we use guidance from our industry association IPIECA. We also report against the UN Global Compact's 10 principles on human rights, labour, environment and anti-corruption.

 For more information see [bp.com/reportingstandards](http://bp.com/reportingstandards)

## HSE charting tool

Filter and analyse information on the group's health, safety and environmental performance. Data for the past 10 years is available, and can be viewed in a variety of chart formats.

 See [bp.com/hsechartingtool](http://bp.com/hsechartingtool)



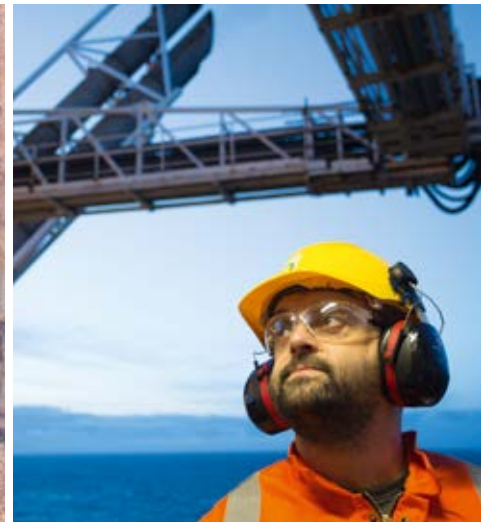
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# Introduction from our group chief executive



We want to play our part in addressing climate change... we joined with other oil and gas companies – through the Oil and Gas Climate Initiative and other activities – to support effective action on this critical issue.



**Bob Dudley**

 See page 14 for more information on BP's view on climate change.

 Find out more about our socio-economic contribution on page 48.

Energy is a long-term business. Our projects often operate over many decades, delivering energy for growth, development and everyday life, as well as value for shareholders.

A business that aims to be sustainable has to order its priorities accordingly. It has to make safety its top priority. It has to earn and maintain the support of society. And it has to take action to help safeguard the environment for future generations. So issues of sustainability are vital for the future of our business.

As this report shows, across BP, all of our key measures of safety performance – process safety events, leaks, spills and other releases, and recordable injuries – were better in 2015 than in 2014, and indeed five years ago. However, while we continued to make progress, we sadly experienced one workforce fatality when a contractor died during renovations at a recently acquired retail site in Turkey. Our thoughts are with his family and friends and we are doing all we can to learn and apply the lessons from this tragic event. Our aspiration is to have no accidents, no harm to people and no damage to the environment – and that means we always have more to do.

## Responsible operating

To earn the support of society, we need to be a responsible operator that is prepared to recognize and help to resolve many different concerns – among them environmental issues, economic impacts and relationships with communities, suppliers, customers, partners and governments.

With this in mind, the falling oil price has been a major challenge for the industry, with sharply reduced cash flow and earnings affecting the choices we can make. We have sought to address difficult choices in a way that is sustainable, showing resilience in the short term while continuing to invest in a disciplined way for long-term growth. And whatever adjustments we make, safety and risk management must not be compromised.

Given the challenges, we have had to scale back our investments, lower our costs and reduce staff numbers. I recognize the personal cost this brings for those affected and their families. In these circumstances we seek to act fairly, treating people with respect in line with our well-established and supportive procedures.

We are working with governments and suppliers to reduce costs and increase efficiency along the value chain – and to do so in a way that is also beneficial for others in our supply chain. We recognize that some of the countries where we operate are under economic strain – as they rely on oil and gas as their primary source of revenue. Our aim is to maintain as much activity as possible, where that can be done competitively.

BP's economic impact goes far beyond the products we sell and the people we employ. According to recent studies, BP contributes to around 300,000 jobs in its supply chain in the US and UK alone – around 10 times the number directly employed. In 2015 we paid \$3.5 billion in taxes worldwide that help support public spending. We spent \$67 million on community programmes, ranging from humanitarian relief efforts to investment in encouraging more young people to take up careers in science, technology, engineering and mathematics.

Responsible operating also extends to our stance on human rights, demonstrated by our commitment to the UN Guiding Principles and by our work to introduce human rights clauses in our contracts with suppliers.

Shortly after marking the fifth anniversary of the tragic accident on the Deepwater Horizon in the Gulf of Mexico, we reached agreements in principle to settle all federal and state claims arising from the incident. This includes \$7.1 billion to address claims for natural resource damages, as part of our commitment to restore the economy and environment of the region. While this provides some closure and certainty in legal terms, we will always regret the accident and remember those who died.

## The global energy challenge

The nature of our business means we can play a major role in the global issues of economic development and the environment. The energy we supply can help to improve living standards, power medical facilities and provide irrigation and sanitation. Our challenge is to fulfil this role while also building a business that can contribute to a sustainable environment in which greenhouse gas emissions are reduced.

We want to play our part in addressing climate change, recognizing that oil and gas are still projected to make up almost half of the

world's energy in 2040 under the International Energy Agency's '450 scenario'. In 2015 we joined with other oil and gas companies – through the Oil and Gas Climate Initiative and other activities – to support effective action on this critical issue and help to enable oil and gas to play a constructive role in the transition to a lower-carbon future.

Our board unanimously supported a shareholder resolution in 2015 that requested we report on how BP is preparing for a lower-carbon future. As a result, we have expanded our coverage on these activities in the energy challenge and climate change section in this report. In short, we are calling for widespread carbon pricing that would incentivize energy efficiency and all forms of lower-carbon fuel and power. We are increasing the proportion of natural gas in our portfolio – gas being a cleaner alternative to coal – everywhere, from the US and Europe to China and India. We are pursuing energy efficiency in our operations as well as providing advanced fuels and lubricants for customers. We are running renewable energy businesses in biofuels and wind and we fund research into climate change solutions at leading universities.

**Enduring values**

We operate in many countries with a range of political systems, regulatory frameworks and business cultures. One of our responsibilities as a global business is to act consistently with regard to values and ethical conduct, so people know exactly what they can expect of BP, regardless of where they are in the world. That's why we put such emphasis on employee adherence to our code of conduct as well as our core values of safety, respect, excellence, courage and one team.

There are many challenges in our industry, but for more than 100 years, through our values, business capabilities and relationships, BP has adapted and navigated through changing times. We will continue to do so, building a business that is sustainable in every sense. Thank you for reading this report.



**Bob Dudley**  
Group chief executive  
16 March 2016



▲ Top: Bob Dudley joined the CEOs of nine other global oil and gas companies at the launch of the first Oil and Gas Climate Initiative report in Paris.

Bottom: At the launch of BP's *Statistical Review of World Energy 2015* in London.

**Our strategy and sustainability**

**We believe that the best way for BP to achieve sustainable success is by acting in the long-term interests of our shareholders, our partners and society.**

We aim to create long-term value for our shareholders by helping to meet growing energy demand in a safe and responsible way. We strive to be a world-class operator, a responsible corporate citizen and a good employer.

By supplying energy, we support economic development and help to improve quality of life for millions of people. Our activities also generate jobs, investment, infrastructure and revenues for governments and local communities.


Keeping a relentless focus on safety is the top priority for us. Rigorous management of risk helps to protect the people at the front line and the places in which we operate.

We continue to enhance our systems, processes and standards, including how we manage the risks that can be created by the actions of our contractors and the operators of joint ventures in which we participate. We understand that operating in politically complex regions and technically demanding geographies requires particular sensitivity to local environments.

We are working to become a simpler business, reducing complexity and increasing efficiency. We are strengthening our portfolio of high-return and longer-life upstream assets, while building high-quality downstream businesses with premium products and advanced technologies. In this way, we are focusing on where we can generate the most value and not necessarily the greatest volume of production. All of this is underpinned by our expertise, technology and relationships.

Strong financial performance is vital, because it enables us to make the investments necessary to produce the energy that society requires, while rewarding and maintaining the support of our shareholders.

We can only retain the ability to operate if we keep the trust of people inside and outside BP. We must earn people's trust by being fair and responsible in everything we do. We monitor our performance closely and aim to report in a transparent way. We believe good communication and open dialogue are vital if we are to meet the expectations of our employees, customers, shareholders and the local communities in which we operate.

 Read more about BP's strategy at [bp.com/strategy](http://bp.com/strategy)

# BP at a glance

## BP delivers energy products and services to people around the world.

Through our two main operating segments, Upstream and Downstream, we find, develop and produce essential sources of energy, turning them into products that people need. We also buy and sell at each stage of the hydrocarbon value chain. In renewable energy, our activities are focused on biofuels and onshore wind.

We also have a 19.75% shareholding in Rosneft.

 For more information see [bp.com/businessmodel](http://bp.com/businessmodel)

## Finding

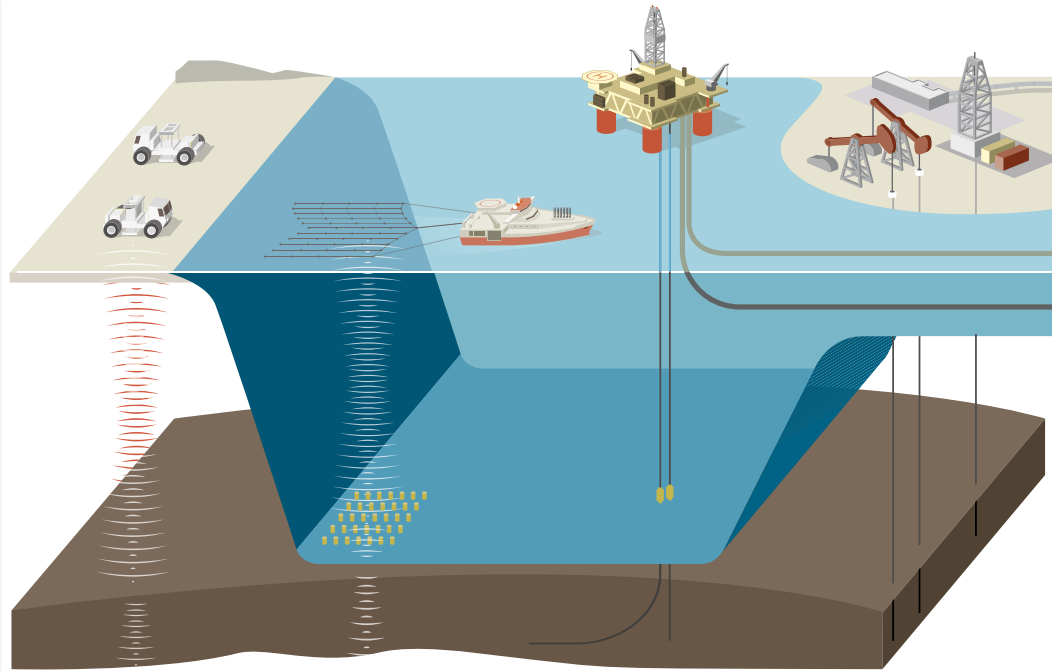
oil and gas

First, we acquire exploration rights, then we search for hydrocarbons beneath the earth's surface.

## Developing and extracting

oil and gas

Once we have found hydrocarbons, we work to bring them to the surface.



Upstream

Our Upstream segment manages exploration, development and production activities.



3.3

million barrels of oil equivalent per day  
2014: 3.2

55%

of our current Upstream portfolio is natural gas  
2014: 56

25.3

million tonnes of greenhouse gas emissions  
2014: 24.4

1.7

million barrels of oil refined per day  
2014: 1.7



0.21

recordable injury frequency  
2014: 0.23



6

Tier 1 process safety events  
2014: 8

 See page 8 for more information on our 2015 performance.



## Transporting and trading

oil and gas

We move hydrocarbons using pipelines, ships, trucks and trains and we capture value across the supply chain.

## Manufacturing

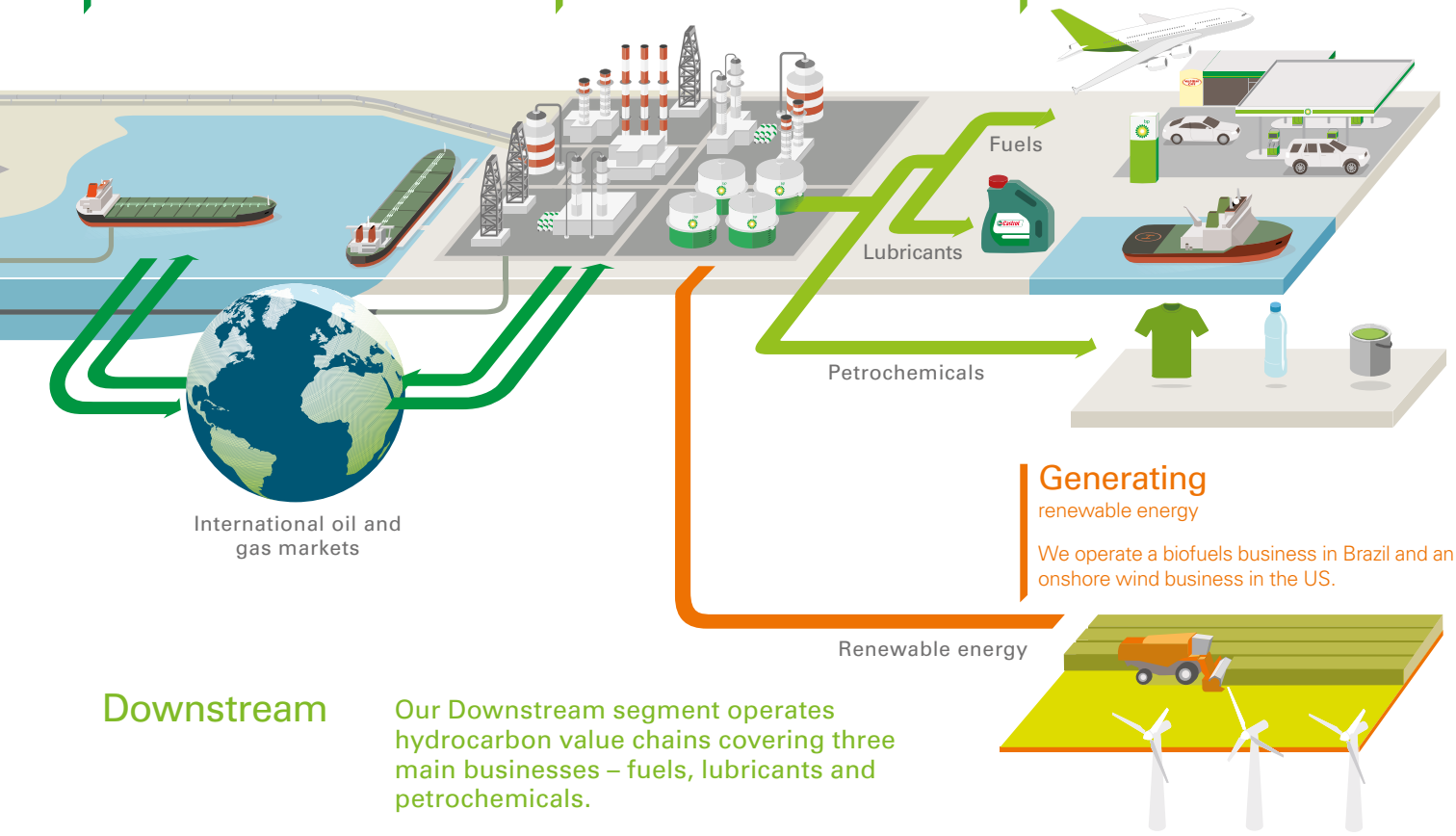
fuels and products

We refine, process and blend hydrocarbons to make fuels, lubricants and petrochemicals.

## Marketing

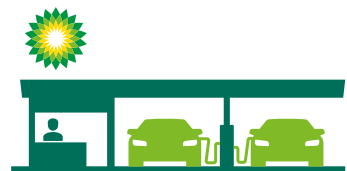
fuels and products

We supply our customers with fuel for transportation, energy for heat and light, lubricants to keep engines moving and the petrochemicals required to make a variety of everyday items.



## Downstream

Our Downstream segment operates hydrocarbon value chains covering three main businesses – fuels, lubricants and petrochemicals.



17,000+

retail sites serving about eight million customers  
2014: 17,000+



12

Tier 1 process safety events  
2014: 18

0.26

recordable injury frequency  
2014: 0.34



21.2

million tonnes of greenhouse gas emissions  
2014: 21.6

795

million litres of ethanol equivalent produced at our three mills in Brazil  
2014: 542




4,424





gigawatt hours of electricity generated at 16 windfarms in the US  
2014: 4,617

# BP around the world

BP has operations in more than 70 countries



 Countries where we have operations or interests are shaded green.

## Upstream\*


-  Primarily (>75%) liquids.
-  Primarily (>75%) natural gas.
-  Liquids and natural gas.
-  Exploration site.

\*Locations are categorized as liquids or natural gas based on 2015 production. Where production is yet to commence, categorization is based on proved reserves. Exploration sites have no significant proved reserves or production as at 31 December 2015.

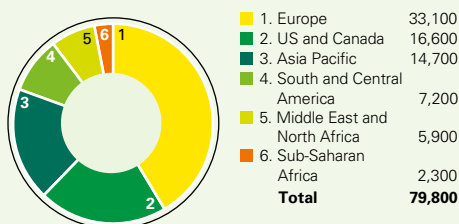
## Downstream

-  Refinery.
-  Petrochemicals site(s).


## Renewable energy

-  Operational assets.

## BP group employees by region



Employee figures include 15,600 service station staff and 4,800 agricultural, operational and seasonal workers in Brazil.

 For more information on our people, see page 22.



## A snapshot of 2015

We joined seven other oil and gas companies in calling for a price on carbon and signed up to the Carbon Pricing Leadership Coalition.

 See page 15.

Bly report recommendations on safer drilling completed.

 See page 36.

BP announced an \$18.7 billion government settlement related to the Gulf of Mexico spill.

 See page 41.

BP's onshore oil and gas activity in the US was set up as a separate business.

 See page 30.

Oil and Gas Climate Initiative supported an effective climate change agreement at the UN conference on climate change in Paris.

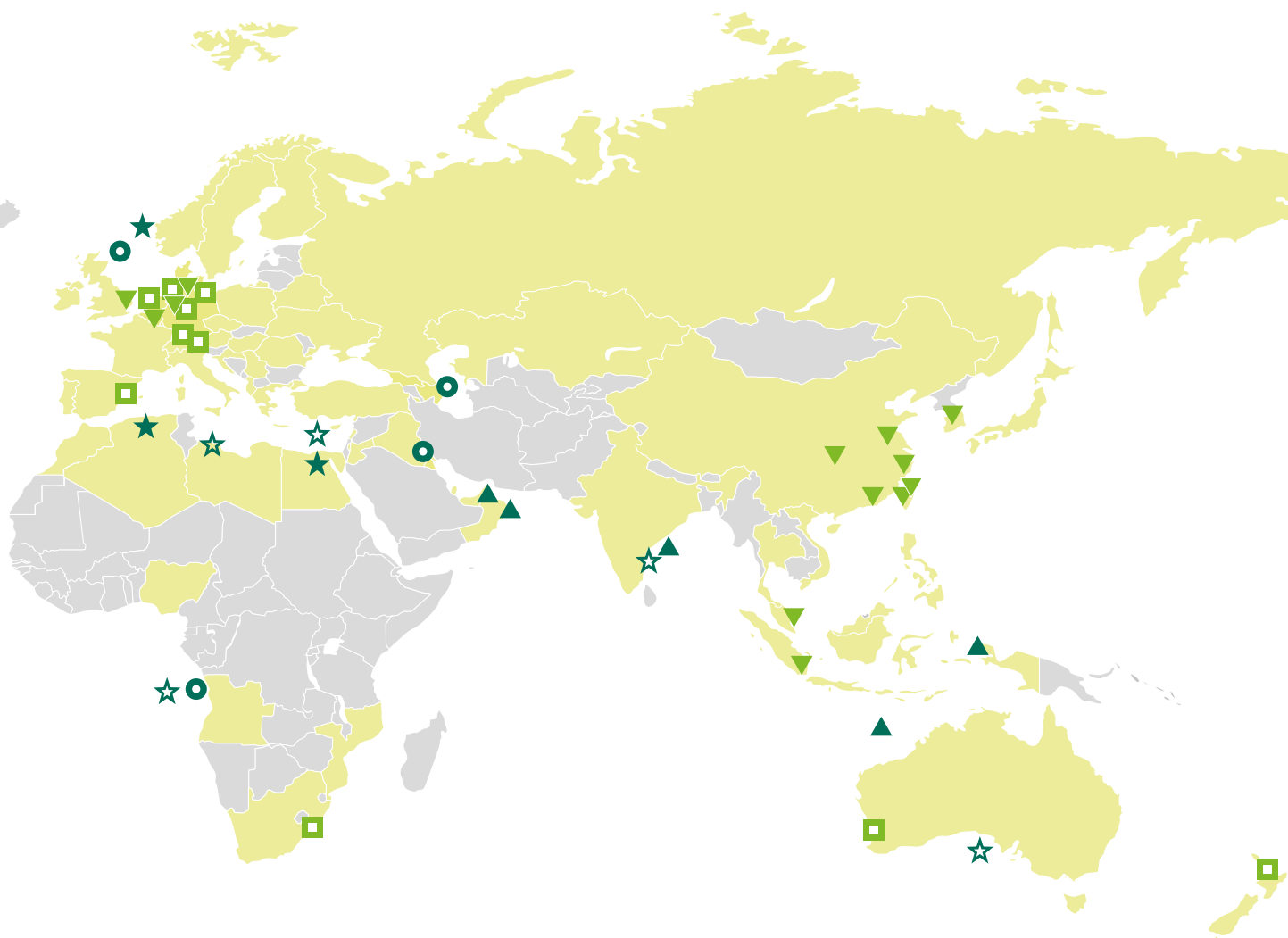
 See page 15.

# 50%

fall in oil price, primarily due to oversupply.

 See our annual report and form 20-F 2015.





BP's board supported a shareholder resolution about our preparation for a lower-carbon future.

 See page 11.

BP signed up to the World Bank Zero Routine Flaring by 2030 initiative and the Climate and Clean Air Coalition's Oil and Gas Methane Partnership.

 See page 42.

1<sup>st</sup>

Air BP became the world's first supplier of commercial jet biofuel.

 See page 16.

We began implementing human rights requirements in our supplier contracts.






 See page 50.

47%

increase in BP's ethanol production in Brazil.

 See page 31.

**Section key:**

-  The energy challenge and climate change
-  Our activities
-  Safety
-  Environment
-  Society

# BP in figures

Data on our safety, environment, people, financial and operational performance from 2011-2015.

For the year ended 31 December

Safety <sup>a</sup>	2011	2012	2013	2014	2015
Fatalities – employees	1	1	4	0	<b>0</b>
Fatalities – contractors	1	3	2	3	<b>1</b>
Day away from work cases – workforce	168	152	130	145	<b>108</b>
Day away from work case frequency <sup>b</sup> (DAFWCF) – workforce	0.090	0.076	0.070	0.081	<b>0.061</b>
Recordable injuries – workforce	677	710	578	547	<b>428</b>
Recordable injury frequency <sup>b</sup> (RIF) – workforce	0.36	0.35	0.31	0.31	<b>0.24</b>
Hours worked – employees (million hours)	165	182	170	173	<b>168</b>
Hours worked – contractors (million hours)	209	220	203	184	<b>185</b>
Losses of primary containment (number)	361	292	261	286	<b>235</b>
Tier 1 process safety events <sup>c</sup> (number)	74	43	20	28	<b>20</b>
Tier 2 process safety events <sup>c</sup> (number)	241	154	110	95	<b>83</b>
Oil spills <sup>d</sup> (≥one barrel)	228	204	185	156	<b>146</b>
Volume of oil spilled (million litres)	0.6	0.8	0.7	0.4	<b>0.4</b>

Environment	2011	2012	2013	2014	2015
Oil spills – to land and water <sup>d</sup> (number)	102	102	74	63	<b>55</b>
Volume of oil unrecovered (million litres)	0.3	0.3	0.3	0.2	<b>0.1</b>
Direct carbon dioxide (CO <sub>2</sub> ) <sup>e</sup> (million tonnes (Mte))	57.7	56.4	47.0	45.5	<b>45.0</b>
Direct methane <sup>e</sup> (Mte)	0.20	0.17	0.16	0.15	<b>0.16</b>
Direct greenhouse gas (GHG) <sup>f</sup> (MteCO <sub>2</sub> equivalent (CO <sub>2</sub> e))	61.8	59.8	50.3	48.6	<b>48.9</b>
Indirect carbon dioxide (CO <sub>2</sub> ) <sup>g,h</sup> (Mte)	9.0	8.4	6.7 <sup>h</sup>	6.8 <sup>i</sup>	<b>6.9</b>
Customer emissions <sup>i</sup> (MteCO <sub>2</sub> )	539	517	422	406	<b>402</b>
Flaring (Upstream) (thousand tonnes (kte) of hydrocarbons)	1,835	1,548	2,028	2,188 <sup>k</sup>	<b>1,863</b>
Environmental expenditure <sup>l</sup> (\$ million)	8,521	7,230	4,288	4,024	<b>8,017</b>
Environmental and safety fines (\$ million)	77.4	22.4	2.5	1	<b>0.6</b>

People	2011	2012	2013	2014	2015
Number of employees – group	84,100	86,400	83,900	84,500	<b>79,800</b>
Number of employees – group leadership	516	546	530	501	<b>431</b>
Women in group leadership (%)	15	17	18	18	<b>19</b>
Women at management level <sup>m</sup> (%)	25	25	27	27	<b>28</b>
People from UK and US racial minorities in group leadership <sup>n</sup> (%)	6	6	6	8	<b>7</b>
People from beyond the UK and US in group leadership <sup>n</sup> (%)	19	20	22	22	<b>23</b>
Employee turnover <sup>o</sup> (%)	14	13	15	12	<b>16</b>
OpenTalk cases <sup>p</sup>	796	1,295	1,121	1,114	<b>1,158</b>
Dismissals for non-compliance and unethical behaviour <sup>q,r</sup>	529	424	113	157	<b>132</b>
Benefits to employees – including wages, salaries, share-based payments, benefits and pensions (\$ million)	12,501	13,448	13,654	13,936	<b>12,928</b>

Performance	2011	2012	2013	2014	2015
Total hydrocarbons produced (thousand barrels of oil equivalent (mboe) per day) <sup>s</sup>	3,454	3,331	3,230	3,151	<b>3,277</b>
Reserves replacement ratio <sup>t</sup> (%)	103	77	129	63	<b>61</b>
Total refinery throughputs (thousand barrels per day (mb/d))	2,352	2,354	1,791	1,721	<b>1,705</b>
Total petrochemicals production <sup>u</sup> (thousand tonnes (kte))	14,866	14,727	13,943	14,014	<b>14,760</b>
Replacement cost profit (loss) <sup>v</sup> (\$ million)	23,412	11,428	23,681	8,073	<b>(5,162)</b>
Taxes to governments – comprising income taxes and production taxes paid (\$ million)	16,367	15,064	13,904	7,980	<b>3,516</b>
Dividends paid to shareholders (\$ million)	4,072	5,294	5,441	5,850	<b>6,659</b>
Contribution to communities (\$ million)	103.7	90.6	103.8	85.0	<b>67.2</b>

## Notes to figures

<sup>a</sup> This represents reported incidents occurring with BP's operational HSSE reporting boundary. That boundary includes BP's own operated facilities and certain other locations or situations.

<sup>b</sup> DAFWCF and RIF are the annual frequency per 200,000 hours worked.

<sup>c</sup> For tier 1 process safety events see page nine notes to graph three for more details. Tier 2 process safety events are those of lesser consequence.

<sup>d</sup> Oil spills are defined as any liquid hydrocarbon release of more than, or equal to, one barrel (159 litres, equivalent to 42 US gallons).

<sup>e</sup> Encompasses all BP's consolidated entities as well as our share of equity-accounted entities other than BP's share of TNK-BP and Rosneft for the relevant periods.

<sup>f</sup> See page nine notes to graph four for more details.

<sup>g</sup> Indirect emissions are associated with the purchase of electricity, heat, steam or cooling into our operations.

<sup>h</sup> The reported 2013 figure of 6.6Mte has been amended to 6.7Mte.

<sup>i</sup> The reported 2014 figure of 6.6Mte has been amended to 6.8Mte.

<sup>j</sup> Based on BP's total reported production of natural gas, natural gas liquids and refinery throughputs.

<sup>k</sup> The reported 2014 figure of 2,167kte has been amended to 2,188kte.

<sup>l</sup> Environmental expenditure includes environmental and spill response costs relating to the Gulf of Mexico oil spill, environmental operating and capital expenditure, clean-ups and additions to the remediation and decommissioning provisions. For further information see page 233 of the annual report and form 20-F.

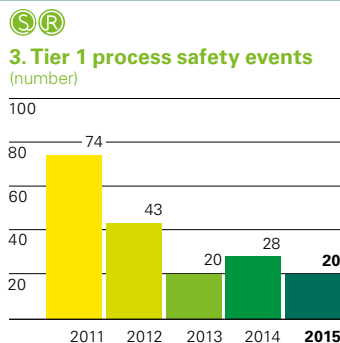
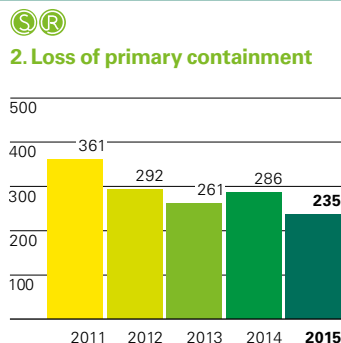
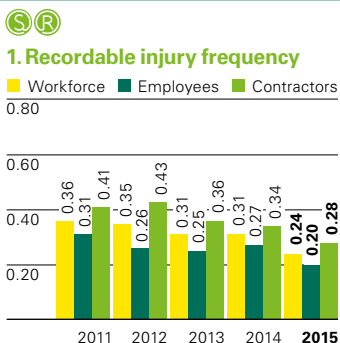
<sup>m</sup> Includes employees who are group leaders, senior level leaders or in other management positions.

<sup>n</sup> This excludes our share of those employed by joint operations in legal entities.

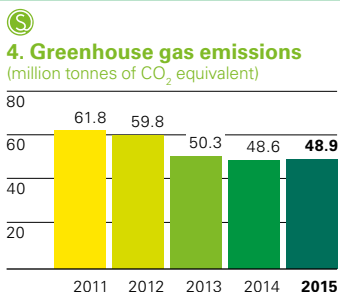
## Our key performance indicators

Our key performance indicators (KPIs) help the board and executive management measure performance against our strategic priorities and business plans. These charts represent data on our non-financial KPIs. We believe these measures have a useful role to play as leading indicators of future performance. See [bp.com/kpis](http://bp.com/kpis)

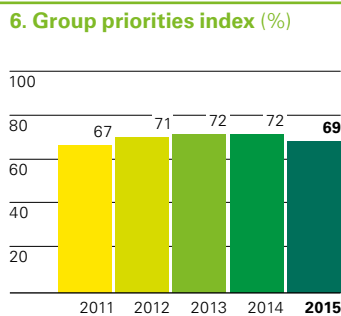
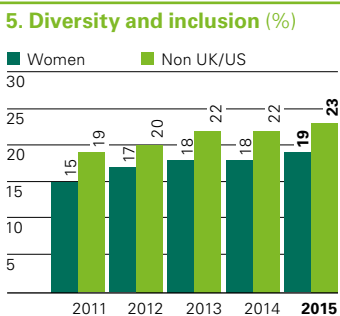
- Ⓢ KPIs used to measure progress against our strategy.
- Ⓡ KPIs used to determine 2015 and 2016 executive remuneration.



- <sup>1</sup> Reported recordable injury frequency measures the number of reported work-related employee and contractor incidents that result in a fatality or injury (apart from minor first aid cases) per 200,000 hours worked.
- <sup>2</sup> Loss of primary containment is the number of unplanned or uncontrolled releases of oil, gas or other hazardous materials, from a tank, vessel, pipe, railcar or equipment used for containment or transfer.
- <sup>3</sup> We report tier 1 process safety events, which are losses of primary containment of greatest consequence – causing harm to a member of the workforce, costly damage to equipment or exceeding defined quantities.



- <sup>4</sup> We provide data on GHG emissions material to our businesses on a carbon dioxide-equivalent basis. This includes CO<sub>2</sub> and methane for direct emissions. Our GHG KPI encompasses all BP's consolidated entities as well as our share of equity-accounted entities other than BP's share of TNK-BP and Rosneft for the relevant periods.
- The 2015 figure reflects our update of the global warming potential for methane from 21 to 25, in line with IPIECA's guidelines.



- <sup>5</sup> We report the percentage of women and individuals from countries other than the UK and the US among BP's group leaders. This helps us track progress in building a diverse and well-balanced leadership team.
- <sup>6</sup> We track how engaged our employees are with our strategic priorities using our group priorities index. This is derived from survey questions about their perceptions of BP as a company and how it is managed in terms of leadership and standards.

61%

reserves replacement ratio, showing our progress in accessing, exploring and extracting resources.  
2014: 63%

\$20.3bn

in net cash from operating activities.  
2014: \$32.8bn

<sup>o</sup> These figures relate to non-retail employees only. In 2015 voluntary turnover (resignations and retirements) was 5%.

<sup>p</sup> Any employee, contractor or other third party can contact our confidential helpline OpenTalk.

<sup>q</sup> This excludes dismissals of staff employed at our retail service stations.

<sup>r</sup> In 2011 and 2012 this data included employee and contractor dismissals. From 2013 this figure includes employee dismissals only.

<sup>s</sup> Calculated on a combined basis of subsidiaries and equity-accounted entities.

<sup>t</sup> Calculated on a combined basis of subsidiaries and equity-accounted entities, excluding acquisitions and disposals.

<sup>u</sup> Petrochemicals production reported within our Downstream segment.

<sup>v</sup> Replacement cost profit or loss reflects the replacement cost of supplies. The replacement cost profit or loss for the year is arrived at by excluding from profit inventory holding gains and losses and their associated tax effect. Inventory holding gains and losses represent the difference between the cost of sales calculated using the average cost to BP of supplies acquired during the year and the cost

of sales calculated on the first-in, first-out method, after adjusting for any changes in provisions where the net realizable value of the inventory is lower than its cost. Inventory holding gains and losses, for this purpose, are calculated for all inventories of hydrocarbons except for those that are held as part of a trading position and certain other temporary inventory positions. Replacement cost profit for the group is a non-GAAP measure.

# Key issues

The scale and nature of BP's operations mean that we manage a large number of sustainability issues.

## Engage



Effectively engaging with our stakeholders – the many individuals and organizations who are affected in some way by BP's activities – is an important and everyday part of our business. Whether it is in our role as an energy provider, employer, or as a business that generates revenues and helps to boost local economies, we engage with a wide and varied group of stakeholders with differing concerns and priorities. The input and feedback we receive from BP's stakeholders throughout the year help inform our approach to reporting.

## Assess

We assess the issues raised by stakeholders, who often have different priorities for BP. For example, in 2015, some groups focused on how we are responding to the climate challenge, while others expressed strong interest in understanding how we create value in the communities where we operate.

We need to prioritize where we focus our efforts in our reporting. That means we consider materiality – that is, how important issues are to our stakeholders and how they could impact BP's ability to deliver its strategy. Each year, subject matter experts from our businesses, policy, risk, government affairs, and safety and operational risk teams review the existing list of key issues and scan the horizon for emerging ones.

And, we validate the issue selection and prioritization with senior leaders, external stakeholders and our board committee responsible for sustainability-related issues – confirming they are aligned with BP's principal risks.

## Define

We define each issue to help us understand and respond to a specific stakeholder concern, which may evolve over time. We report externally on issues rated as medium to high in terms of materiality. The top seven issues for 2015 are outlined below. Some issues are closely linked with others, for example supply chain issues are relevant to labour rights and building local skills, and we report on these in the relevant areas.

### Section key:

- The energy challenge and climate change
- How we operate
- Our activities
- Safety
- Environment
- Society

### Accidents and oil spills

- ■ Employee and contractor safety p26, p38
- Oil spill preparedness and response p41
- Process safety p35

### Climate change

- The energy challenge p13
- ■ Greenhouse gas emissions p16, p42
- ■ Lower-carbon future p16, p31

### Managing risk

- Board and executive governance p24
- Geopolitical context p24
- Joint ventures p27

### Business ethics

- Anti-bribery and corruption p21
- Political lobbying p21
- Revenue transparency p49

### Human rights

- Labour rights in the supply chain p50
- Community grievance mechanisms p47
- Security p50

### Value to society

- Our socio-economic contribution p48
- Building local skills p48
- How we treat our people p22

### Local environmental impacts

- Air quality p43
- ■ Biodiversity and sensitive areas p33, p45
- Water p44

We engaged with stakeholders on many sustainability-related issues throughout 2015.

### Contractors on drilling safety



Good communication with our contractors is key to maintaining safe and reliable operations across BP. We discussed challenges the industry faces in improving safety performance with around 25 of our drilling contractors and wells service providers at our annual global wells organization safety workshop.

Participants acknowledged the need to share what could be working better and also the difficulty of openly talking about such topics in the current market environment. Working together, we use the outcomes from the discussion to inform and enhance our safety approaches and collaboratively review actions taken.

“Having attended the workshops for the last couple of years, what is helping is getting the perspective of the other contractors and then taking that into our collaboration with BP. One of the best things we can do to enhance safety is to get inspiration – be provoked, or moved – to do some things differently and better than before.”

**Claus Hemmingsen,**  
Chief executive officer, Maersk Drilling

See page 36 for more information on drilling safety.

### Socially responsible investors on climate change reporting

Climate change, and how it could impact BP’s long-term resilience, continues to be high on the socially responsible investors’ (SRI) agenda. This gained more prominence in 2015 in light of the UN climate change conference in Paris. Also, a coalition of shareholders filed a special resolution requesting that we report more on BP’s preparation for a lower-carbon future. The resolution, which was supported by our board, specifically wanted more information on our:

- Emissions management.
- Post-2035 portfolio resilience.
- Investments in lower-carbon energy and research and development.
- Strategic key performance indicators and executive incentives.
- Public policy activities.

We engaged with SRIs throughout the year to get their views. We held a webcast explaining the shareholder resolution and undertook a series of meetings in Europe, the UK and US,



which included discussion on the resolution and the wider climate change context.

We also hosted our annual SRI meeting in London, where the chairman and BP executives explained our view of the wider energy context, while providing tangible examples of how we are managing operational emissions.

Read more about our view on the energy challenge and climate change on page 12.

### Industry peers and others on managing methane emissions

We joined the Climate and Clean Air Coalition’s Oil and Gas Methane Partnership as part of our efforts to collaborate with governments, non-governmental organizations (NGOs) and our peers on a common approach to reducing methane emissions from oil and gas operations.

oil and gas companies participating in the partnership.

See page 42 for how we are managing our GHG emissions.

### NGOs on human rights

The Tangguh Independent Advisory Panel (TIAP) provides guidance to BP on the non-commercial aspects of our operations in Tangguh, Indonesia. As part of this work, we held engagement sessions with local and international NGOs in the UK and US to share the results of TIAP’s 2015 assessment and some of the highlights and challenges of BP’s social development programmes. Stakeholders discussed issues such as security and human rights and the progress of indigenous Papuan development through local enterprises.



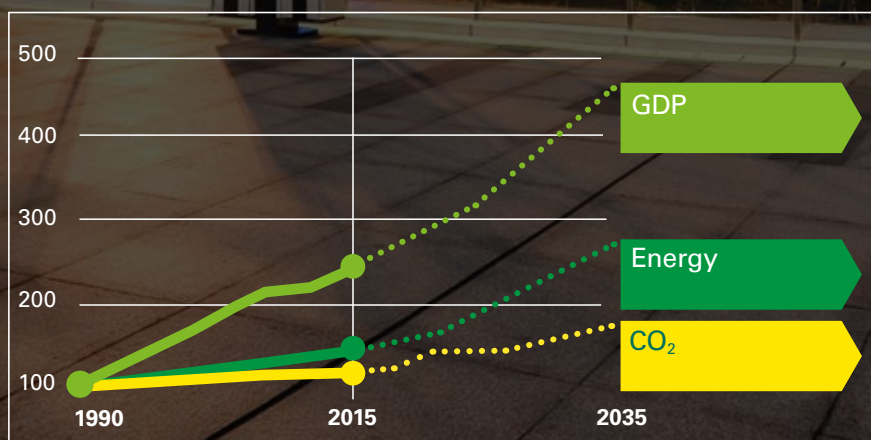
Read the TIAP 2015 report and BP’s response at [bp.com/indonesia](http://bp.com/indonesia)

# The energy challenge and climate change

Today's challenge is to manage and meet growing worldwide demand for energy while addressing climate change and other environmental and social issues.

## GDP, energy and emissions

Energy use and related CO<sub>2</sub> emissions are expected to increase at slower rates than economic growth, thanks to innovation leading to energy efficiencies and lower-carbon intensity.



Source: BP Energy Outlook

# Energy outlook

Over the next few decades, population and income are projected to rise, resulting in greater demand for energy that is affordable, secure and sustainable.

## Growing demand for energy

Access to affordable and secure energy is essential for economic prosperity. Energy provides heat and light for homes, fuel for transportation and power for industry. And, everyday objects – from plastics to fabrics – are derived from oil.

The world economy is likely to more than double from 2014 to 2035, largely driven by rising incomes in the emerging economies and a projected population increase of 1.5 billion.

We expect world demand for energy to increase by as much as 34% between 2014 and 2035. This is after taking into account improvements in energy efficiency, a shift towards less energy-intensive activities in fast-growing economies, governmental policies that incentivize lower-carbon activity and national pledges made at the 2015 UN climate conference in Paris.

There are more than enough energy resources to meet this growing demand, but there are a number of challenges.

## Affordability

Fossil fuels are currently cheaper than renewables but their future costs are hard to predict. Some fossil fuels may become more costly as the difficulty to access and process them increases; others may be more affordable with technological progress, as seen with US shale gas. While many renewables remain expensive, innovation and wider deployment are likely to bring down their costs.

## Supply security

Energy resources are often distant from the hubs of energy consumption and in places facing political uncertainties. More than half of the world's known oil and natural gas reserves are located in just eight countries.

## Carbon intensity

Fossil fuels – though plentiful and currently more affordable than other energy resources – emit carbon dioxide (CO<sub>2</sub>) and other greenhouse gases through their production and use in homes, industry and vehicles. Renewables are lower carbon but can have other environmental or social impacts, such as high water consumption or visual intrusion.

## All sorts of energy are required

We believe a diverse mix of fuels and technologies is needed to meet growing energy demand, while supporting the transition to a lower-carbon economy.

## Oil and natural gas

Over the next few decades, we think oil and natural gas are likely to continue to play a significant part in meeting demand for energy. They currently account for around 56% of total energy consumption, and we believe that will decrease to about 54% in 2035. For comparison, under the International Energy Agency's most ambitious climate policy scenario (the 450 scenario<sup>1</sup>), oil and gas would still make up 50% of the energy mix in 2030 and 44% in 2040 – assuming carbon capture and storage is widely deployed.

Oil is a good source of energy for transportation as it has a high energy density. That means vehicles go further on less weight and volume of fuel than alternatives. Also, oil's liquid form makes it easy to move around, globally and locally. For these reasons, we expect oil to still account for almost 90% of transportation fuels in 2035 – compared with 94% today.


Natural gas is likely to play an increasing role in meeting global energy demand, because it's available at scale, relatively low cost and lower carbon than other fossil fuels. By 2035 gas is expected to provide 26% of global energy, placing it on a par with oil and coal.

We believe shale gas will contribute more than half of the growth in natural gas globally between 2014 and 2035. In the US, the growth of shale gas has already had a significant impact on gas demand as well as CO<sub>2</sub> emissions, which have fallen back to 1990s levels.

The increasing gas supply in the US and other countries is encouraging the use of liquefied natural gas worldwide, which is expected to double between 2014 and 2035.

## Renewables

Renewables are the fastest-growing energy source. Over the past few years, there has been rapid expansion of the use of solar power due to cost reduction in manufacturing and public subsidies. That said, renewables, excluding large-scale hydroelectricity, currently account for around 3% of energy consumption. While they are starting from a low base, we estimate that by 2035 they will contribute around 9% of total global energy demand.

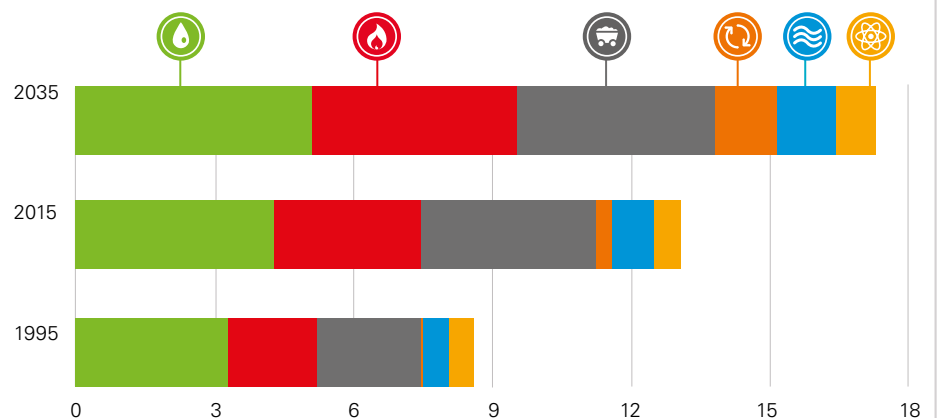
 See [bp.com/energyoutlook](http://bp.com/energyoutlook) for our latest outlook to 2035, along with our alternative scenario for a faster transition to a lower-carbon future.

<sup>1</sup> From *World Energy Outlook 2015*. © OECD/International Energy Agency 2015, page 35. The IEA 450 scenario assumes a set of policies that bring about a trajectory of greenhouse gas emissions from the energy sector that is consistent with limiting long-term average global temperature increase to 2°C.

## Energy consumption (billion tonnes of oil equivalent)

Today around 32% of energy consumed comes from oil, 30% from coal, and 24% from gas – so 86% from fossil fuels in total. Hydroelectricity accounts for 7%, nuclear for 4% and other renewables for just 3%.

-  Oil
-  Gas
-  Coal
-  Renewables
-  Hydro
-  Nuclear



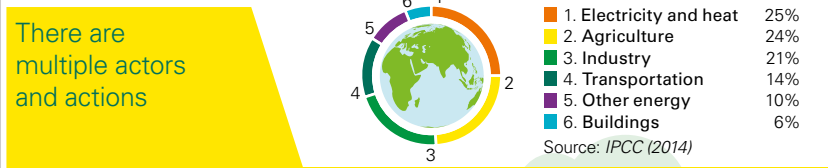
Source: BP Energy Outlook

# The climate challenge

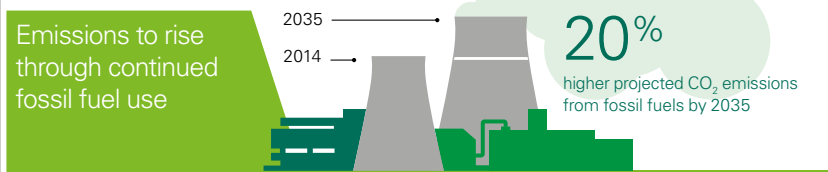
BP recognizes that the existing trend of increasing greenhouse gas emissions worldwide is not consistent with limiting the global average temperature rise to 2°C or lower.

## A complex issue

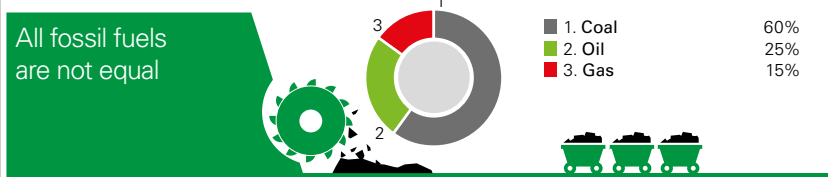
BP believes global action on climate change is needed. It's a complex issue and all aspects of the debate should be considered in their totality.



Carbon dioxide (CO<sub>2</sub>) emissions from energy make up around two thirds of all global man-made greenhouse gas emissions. This energy supplies many staples in today's world: heat, light, industrial power and transportation. Agriculture and land-use changes, such as deforestation and clearing land for crops, account for about a quarter of the emissions.



BP's *Energy Outlook* projects that global CO<sub>2</sub> emissions from fossil fuels may be 20% higher in 2035 than they were in 2014, partly as a consequence of coal use in rapidly growing economies. This is not what BP wants to see, but what we currently thinks is likely.



About 60% of potential CO<sub>2</sub> emissions from known fossil fuel reserves are from coal, the most carbon-intensive fossil fuel. By comparison, gas would account for around 15% of potential CO<sub>2</sub> emissions and is the least carbon-intensive fossil fuel.



Around 80-90% of CO<sub>2</sub> emissions from oil and gas products are from their use by consumers, with the remainder generated during their extraction and development.

The Intergovernmental Panel on Climate Change states that warming of the climate system is unequivocal, and is in large part due to an increase in greenhouse gas (GHG) emissions from human activities. It makes clear that substantial and sustained reductions of GHG emissions are needed to limit warming to 2°C, the threshold recognized by governments as limiting the worst impacts of climate change.

## Not an easy solution

Achieving substantial and rapid GHG emissions reductions will be challenging, especially in light of growing demand for energy in emerging economies. The scale, cost and long life of much of the world's existing energy infrastructure could slow down the transition to a lower-carbon future.

Some potentially important lower-carbon technologies – including carbon capture and storage, electric vehicles and nuclear energy – face significant political, infrastructure, logistical or cost challenges. The costs for some technologies, like solar, have fallen, while others have remained high. As a result, some governments have reduced their levels of support if not required or too costly.

## Taking action

Meeting the climate challenge requires efforts by all – governments, companies and consumers.

Governments must lead by providing a clear, stable and effective climate policy framework. In BP we consider placing an economy-wide price on carbon – either through carbon taxes or a cap-and-trade system – as the best solution. This allows companies to provide energy competitively while taking steps to limit GHGs, and enables consumers to make informed choices.

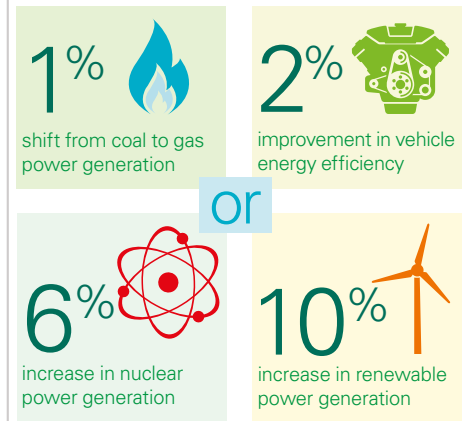
We are working with peers in the sector to highlight and help address this global challenge. For example, we are active participants in the Oil and Gas Climate Initiative (OGCI), a voluntary, CEO-led industry initiative that aims to catalyse meaningful action on climate change through best practice sharing and collaboration. Combined, OGCI members produce over one-fifth of the world's oil and gas.

BP is playing its part by calling for a price on carbon, providing lower-carbon products including natural gas and renewables, pursuing energy efficiency and supporting research.

## How can emissions be reduced?

There are many ways to decrease GHGs, and some can have more immediate impact than others. BP calculates that each of these options could cut global emissions by the same amount.

Alternatives with equal benefit:





# Calling for a price on carbon

BP believes that carbon pricing by governments is the most comprehensive and economically efficient policy to limit greenhouse gas emissions.

Putting a price on carbon – one that treats all carbon equally, whether it comes out of a smokestack or a car exhaust – would make energy efficiency more attractive and lower-carbon energy sources, such as natural gas and renewables, more cost competitive. A carbon price incentivizes both energy producers and consumers to reduce their GHG emissions. Governments can put a price on carbon via a well-constructed carbon tax or cap-and-trade system.

Our view is that putting a price on carbon will reduce emissions at a larger scale and at lower cost than alternative policy measures, by reducing the demand for carbon-intensive products. It might make our operations and products more costly in some cases. We consider that this is fair – as long as the carbon price impacts all GHG emitters equally – and we are keen to compete on this level playing field.

## A global carbon price

We were pleased to see that the agreement made at the 2015 UN climate conference in Paris creates the possibility for carbon pricing to help deliver global goals and national contributions for reducing GHG emissions. We recognize different national prices are a necessary and practical first step but would like to see convergence towards a single global carbon price over time.

In the meantime, any national carbon pricing mechanism should address the impacts of unequal international competition. Otherwise there is a risk of carbon leakage, meaning that energy-intensive industrial activity and investment could just move from one country to a less-regulated part of the world – potentially increasing their associated GHGs worldwide.

## What BP is doing

BP has long publicly supported measures to put a price on carbon emissions, including our endorsement of the World Bank carbon pricing statement in 2014.

We stepped up our advocacy in 2015, joining seven other oil and gas companies in calling on the UN and governments to put a price on carbon. Work is continuing through face-to-face meetings between the companies, select governments and UN representatives to share lessons learned and views on policy to effect change.

We have also joined the Carbon Pricing Leadership Coalition, which brings together senior representatives from government, the private sector and civil society to expand the use of carbon pricing.

BP actively prepares for a future with a potentially higher carbon price by requiring our businesses to use an internal carbon price – currently set at \$40 per tonne of CO<sub>2</sub> equivalent for industrialized countries – in evaluating large new projects.

“If governments act to price carbon, this discourages high-carbon options and encourages the most efficient ways of reducing emissions widely, including reduced demand for the most carbon-intensive fossil fuels; greater energy efficiency; the use of natural gas in place of coal; increased investment in carbon capture and storage, renewable energy, smart buildings and grids; off-grid access to energy; cleaner cars; and new mobility business models and behaviours.”

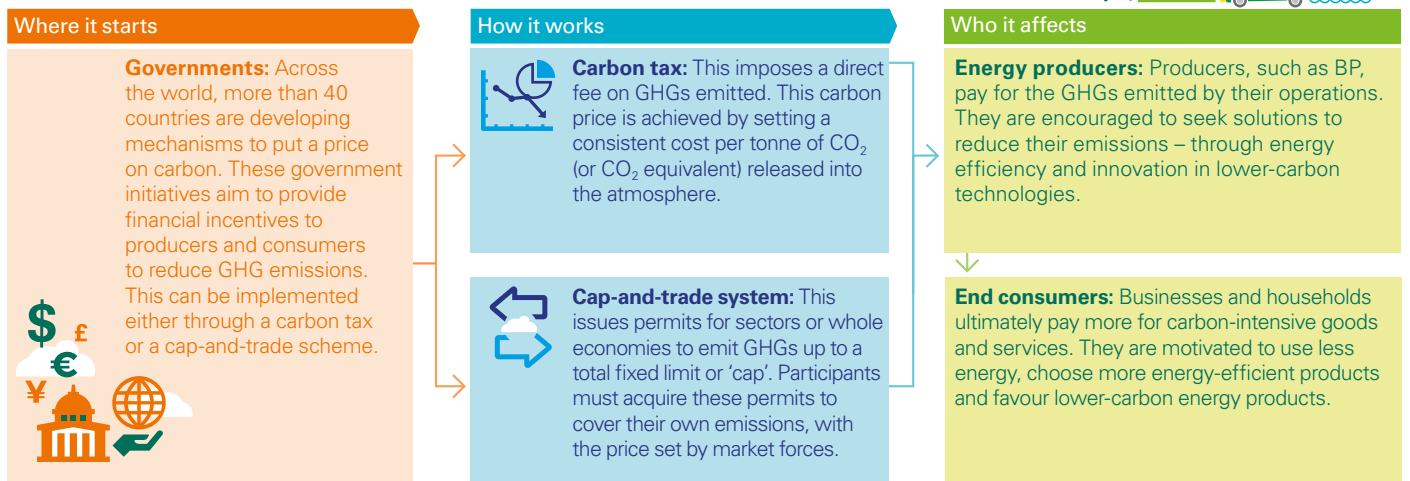
From the 25 June 2015 letter to the United Nations Framework Convention on Climate Change from the CEOs of BG, BP, Eni, Shell, Statoil and Total.



40+ countries have put or are putting in place carbon pricing mechanisms.

## How carbon pricing works

We believe a global carbon price would help to provide the right incentives for everyone – energy producers and consumers alike – to play their part.



# Working towards a lower-carbon future

BP is helping to meet the demands of a lower-carbon future through our portfolio choices and by working to reduce the carbon footprint of our products.

## Supplying natural gas

Natural gas produces about half as much carbon dioxide (CO<sub>2</sub>) as coal when burned to generate power.

Some argue that gas for power is not much better than coal for climate, when taking into account its full life cycle greenhouse gas (GHG) emissions. This is because some GHG emissions, particularly methane, occur during the production and supply of both coal and gas. Only a small amount of methane is emitted, but it is a powerful GHG that traps more heat than CO<sub>2</sub>.

Most government, industry and academic studies that have compared gas and coal for power have found that, over the long term, gas has significantly lower life cycle GHG emissions than coal. Also, based on our own operational experience, we believe methane emissions from gas developments can be economically and technically controlled to increase the climate advantage of gas over coal further.

Around half of our current Upstream portfolio is natural gas and we are increasing that proportion over time. BP is developing major gas supply chains to Europe, including our Southern Gas Corridor project to bring gas from the Caspian Sea to European markets. BP is also supplying gas to China and India, two countries that are likely to account for more than half of the growth in global energy demand up to 2035.

## Emissions reduction – working with others

Our collaborations include:

- World Bank's Zero Routine Flaring by 2030 initiative.
- World Bank's Global Gas Flaring Reduction partnership.
- Climate and Clean Air Coalition Oil and Gas Methane Partnership.
- Oil and Gas Climate Initiative.


## Investing in renewables

Renewables will play an increasingly important role in achieving a lower-carbon world. They account for around 3% of global energy today, excluding large-scale hydroelectricity, but they are the fastest-growing energy source.

BP invests in renewable energy where we can build commercially viable businesses at scale. Much of our activity is in biofuels in Brazil. We own and operate three sugar cane ethanol mills, farming around 127,000 hectares. We estimate that, as a result of BP's 2015 ethanol production, approximately 0.7 million tonnes of CO<sub>2</sub> was avoided. That's equal to 334,000 fewer European cars on the road for a year.

We are among the top wind energy producers in the US, with interests in 16 wind farms across the country. Our share accounts for a combined wind energy capacity of 1,556 megawatts of electricity – that is enough to power all the homes in a city the size of Dallas. And, we calculate that our wind activities helped avoid around 2.7 million tonnes of CO<sub>2</sub> in 2015.

Additionally, Air BP is the world's first supplier of commercial jet biofuel, supplying Lufthansa, SAS and KLM using the existing fuelling infrastructure at Norway's Oslo airport.

 See page 31 for more information on renewable energy.



## Developing gas in Oman – low emission by design

At our Khazzan project in Oman, we expect to deliver around 1.5 billion cubic feet of gas per day – equal to about 40% of Oman's total daily domestic gas supply. The project covers an area more than twice the size of London and will comprise 325 wells over 15 years.

From the outset, we have designed Khazzan to be an inherently low-emission concept. For example, we have built a central processing facility where we remove water and condensate from the gas produced at all well sites in order to create market quality gas. Centralized gas processing takes away the need for processing equipment at each individual well site, which can be a source of additional methane emissions in gas production.

Additionally, the processing facility at Khazzan is powered by the gas we produce, and provides electricity that powers well-site equipment such as valves and pneumatic devices. This reduces the amount of methane emitted – especially when compared with remote tight gas development projects that use natural gas as their power source. And, if the sites are too remote to connect to the central facility, we install solar panels to power equipment.

This low emission approach has business benefits too. The Khazzan central processing facility is twice as efficient as a typical oil and gas field – thanks to the ability to use recycled waste heat from the gas turbines elsewhere at the facility.

The Khazzan project is a first of its kind design for BP and will play an integral role in increasing the proportion of gas in our portfolio.



## Pursuing efficient operations and products

The International Energy Association estimates that energy efficiency will contribute approximately half of the emission reductions required by 2030 to stay below the 2°C threshold.

BP is focusing on ways to improve the energy efficiency of our operations and – even more importantly – the use of our products. Only 10-20% of emissions associated with oil and gas products come from the processes used to make them, with the remainder coming from consumer use in industry, power plants, buildings and transportation.

### Efficient operations

Reducing the amount of energy BP uses can help to minimize our environmental impacts and provide economic benefits. Our operations typically consider energy use in their business plans and assess, prioritize and implement technologies and systems that could improve energy usage.

Our Zhuhai 3 petrochemicals joint venture in China, for example, is the first site to implement BP's newest technology for producing purified terephthalic acid, used to make clothes, paint, plastic bottles and other items. Compared with

conventional technology, Zhuhai 3 delivers around 65% lower GHG emissions.

BP is working to reduce emissions from gas production through programmes to detect and repair methane leaks and to reduce flaring. And, for our oil production activities, new projects must seek alternatives to flaring and venting as a means to dispose of associated gas; this could include capturing the gas for reuse or re-injection in the reservoir.

At our refineries, we use the Solomon Energy Intensity Index® (EII®) to measure energy performance. This well-established industry benchmark allows us to compare performance of our refineries with each other and with our peers. Each of our refineries set and track progress against an EII® target specific to its circumstances.

### Efficient use of our products


We provide increasingly energy-efficient and high-performance products to our customers, meaning if less fuel is used, fewer GHGs are emitted.

Over the past decade we have been developing *Castrol* lubricants with lower viscosity, which helps manufacturers to improve the fuel efficiency of their vehicles.

We estimate that – when compared with our 2004 *Castrol* formulation – our more recent lubricants have helped avoid more than five million tonnes of CO<sub>2</sub> over the past 10 years. That's the CO<sub>2</sub> equivalent of removing almost a quarter of a million European cars from the road each year.

Our premium *Ultimate* fuels also contribute to better fuel efficiency by restoring the cleanliness of the engine and improving combustion performance. And, we provide customers with information on how to maximize the fuel efficiency of their vehicles, by taking steps such as accelerating and braking moderately and using the correct tyre pressure.

We work in partnership with vehicle and equipment manufacturers to achieve more efficient use of our fuels and engine oils. In Europe for example, Ford's EcoBoost engines – used in the Fiesta, Focus, Mondeo and other models – are engineered with specially formulated advanced *Castrol* oils, which help to improve fuel efficiency and reduce emissions.

 See page 42 for more information on GHG emissions management and performance.

## Supporting research

Technological innovation underpins our efforts for more efficient production and use of fossil fuels, as well as for longer-term alternatives to fossil fuels. We deepen our understanding of future energy, technology and climate change trends through in-house research and in partnership with leading academics.

We have been supporting Princeton University's Carbon Mitigation Initiative since its inception in 2000. It brings together scientists, engineers and policy experts to design carbon mitigation strategies that are safe and effective as well as affordable.

BP's Energy Sustainability Challenge programme, based on the research of 15 university partners from around the world, looks at the potential effects of natural resource scarcities on energy supply and demand. For example, climate change may increase water scarcity, so the programme looks at how energy can be supplied, taking into account competing pressures for the use of water.

 See [bp.com/energysustainabilitychallenge](http://bp.com/energysustainabilitychallenge) for more information.

Additionally, we have been investing in start-up companies to better understand evolving alternative and advanced technologies such as electric vehicles, batteries and bio-lubricants. One of these companies – Solidia – has developed a technology to make the production of concrete less carbon-intensive. Cement is produced in a way that generates less CO<sub>2</sub> and is then cured or hardened by the addition of CO<sub>2</sub>. This approach can result in up to a 70% reduction in the concrete's carbon footprint and is being rolled out through a partnership with LaFarge across the US and Europe.

### Research – working with others

BP partners include:

- BP Institute, University of Cambridge.
- Carbon Mitigation Initiative, Princeton.
- Center for International Environment and Resource Policy, Tufts University.
- Energy Bioscience Institute, University of California.
- Energy Technologies Institute, UK.

## Carbon capture and storage

Implementation of carbon capture and storage (CCS) technology could enable continued large-scale use of fossil fuels in a tightly carbon-limited world. But it faces many barriers: high costs, commercial complexity, and an uncertain business and policy environment.

BP has built capability in CCS technology through projects such as the In Salah CO<sub>2</sub> storage project in Algeria and through developing hydrogen-fired power projects in Abu Dhabi and California. Additionally, the CO<sub>2</sub> Capture Project, a BP-operated joint partnership, is developing and piloting technology and demonstrating safe and secure geological containment. This initiative was recognized in 2015 for its work in improving the understanding of the CCS life cycle.

We share our experience with, and support for, CCS through various other industry initiatives.

# Resilience – now and in the future

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

We believe having a balanced portfolio with flexibility and a dynamic investment strategy – supported by preparation for potential climate impacts to our facilities – give us the resilience to meet today’s challenges as well as setting us up for the future.

## A balanced portfolio with flexibility

BP strives for a balanced portfolio in terms of its resources, geography and businesses. This helps us manage changing circumstances, both expected and unforeseen.

The diversity of our portfolio – upstream, downstream and renewables – helps us to provide energy to support economic development and to contribute to a lower-carbon future. Natural gas accounts for around half of our Upstream portfolio and our biofuels production has grown year-on-year.

We also think it’s important to have geographical diversity of operations. This gives us access to a variety of resources and markets, and provides robustness to geopolitical events.

And, by having upstream and downstream businesses and well-established trading capabilities, we have a cushion to oil price volatility as downward pressures in one part of the group can create opportunities in another.

## Dynamic investment strategy

BP’s proved reserves are produced, and historically replaced, over a 13-year time

frame on average. This means we have time to adapt our investment strategy to changes in policy, market or technology conditions.

## Greenhouse gas policy

We assess how potential carbon policy could affect our businesses now and in the future. This is particularly important as we expect, by 2020, around two thirds of BP’s direct emissions will be in countries subject to carbon policy.

To help us anticipate greater regulatory requirements for greenhouse gas (GHG) emissions, we factor a carbon cost into our own investment decisions and engineering designs for large new projects and those for which emissions costs would be a material part of the project. In industrialized countries this is \$40 per tonne of carbon dioxide (CO<sub>2</sub>) equivalent. We also stress test at a higher carbon price.

We consider this carbon cost, along with other factors, when assessing the economic value of the investment. To date, the internal carbon price has not resulted in a no-investment decision. The real benefit is that it, along with energy efficiency considerations, has encouraged projects to be set up in a way that will have lower GHG emissions.


## Supply and demand

We make regional and global assessments of energy supply and demand in our *Energy Outlook* and we undertake detailed analysis of the transport sector.

Our *Energy Outlook* takes the long-term view, considering a wide variety of factors. That means that we try to look past the near-term volatility in oil prices and identify the structural trends, such as sustainable technological advancements enabling faster growth in shale gas, tight oil and some renewables.

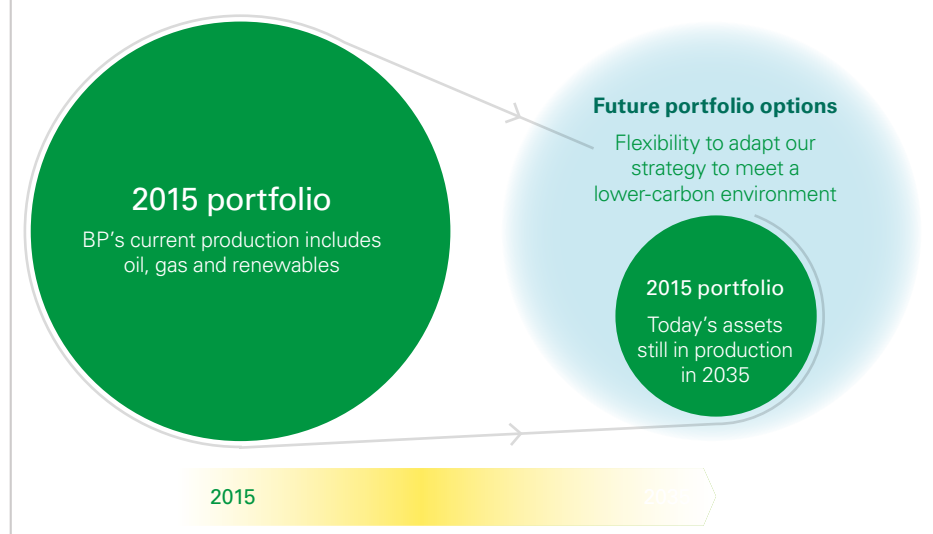
While our *Energy Outlook* presents what we think is likely to happen, we recognize that there are many uncertainties. One key uncertainty is climate change policy, so we developed an alternative ‘faster transition’ scenario. It’s based on a carbon price of \$100 per tonne in the OECD and other leading economies, with at least \$50 per tonne elsewhere; tougher CO<sub>2</sub> standards for vehicles; and 80% of estimated potential energy efficiency gains for industry and buildings in place by 2035. In this scenario, oil and gas would still account for more than 50% of total energy consumption, with renewables at 15%.

We update our *Energy Outlook* on an annual basis to be able to inform our strategy. We also consider external assessments such as those by the International Energy Agency and International Transport Forum.

 See [bp.com/energyoutlook](http://bp.com/energyoutlook) for more information about our faster transition scenario.

## Flexibility in portfolio choices

We renew our portfolio to meet demand for our products. We have flexibility in investment decisions as our current portfolio matures and external circumstances change.



## UN conference on climate change – COP21

BP welcomes the direction provided by the Paris Agreement for countries to determine their contributions to holding temperature rise well below 2°C.

Although developed countries are still expected to lead, the agreement applies to all participating countries. It commits all countries to submit climate pledges, regularly report on progress and declare new and more ambitious contributions every five years, following reviews of collective progress.

We are pleased the agreement creates the possibility for carbon pricing to help deliver global goals and national contributions. We will continue to work in our own right, and collaboratively with other companies in the Oil and Gas Climate Initiative, to evolve our businesses towards, and help deliver, the aims of the agreement. We continue to work with all relevant stakeholders to play our part.

### Fluctuating oil prices

We test our investments against a range of oil and gas prices to check their profitability over the long term. We take into account current price levels and our long-term outlook.

We view the lower oil prices seen in late 2014 through early 2016 as a return to price volatility. That said, we have been reviewing our strategy against this environment as we expect prices to remain lower for longer.

Importantly, in light of the current environment, the break-even price of many of our investments goes down as industry suppliers reduce their costs to meet with market conditions.

### Cost of supplying oil and gas

The extraction of oil and gas varies in cost according to a number of factors, but most significantly the nature of the asset class or resource. For example, it is generally cheaper to extract conventional onshore oil and gas than oil sands or deepwater resources.

Technology advancements and government incentives are other key contributors.

Through our *Technology Outlook*, launched in 2015, we have forecast the cost of supplying oil and gas to 2050 – taking into consideration expected technological improvements. We have also considered the impact of a carbon price at \$80 per tonne. We use this as a lens to review the future attractiveness of our various oil and gas resources.

Governments can impact investment into various resources, depending on which types they incentivize through taxes and subsidies.

### Evolving technology

We undertake periodic and thorough reviews of potential innovation out to 2050 and collaborate with external technology-focused bodies. Our *Technology Outlook* examines what technology can do in terms of access to primary energy resources and how it might change the power and transport sectors, especially in the context of reducing carbon emissions.

We recognize that some emerging technologies could lead to rapid improvements in the performance of energy storage devices like batteries, solar conversion and the use of hydrogen as a fuel. We monitor these developments and invest in start-up companies to understand and participate in these potentially disruptive technologies.

### Climate change adaptation

We use specialized climate models developed with Imperial College and Princeton to help us predict possible climate impacts relevant to our operations, as well as to better understand how extreme weather events might impact our business in the future.

We seek to address potential climate change impacts – such as sea-level rise, higher temperatures, extreme weather events and

greater precipitation – on our new projects from the start, in the design phase. We have guidance for existing operations and projects on how to assess potential climate change risks and impacts – to enable mitigation steps to be incorporated into project planning, design and operations.

For example, we decided to place some of the new South Caucasus pipeline deeper underground to avoid potential washouts due to flooding. And, in Iraq, where we are redeveloping an existing oilfield, we are selecting new equipment to better withstand extended periods of high temperatures.

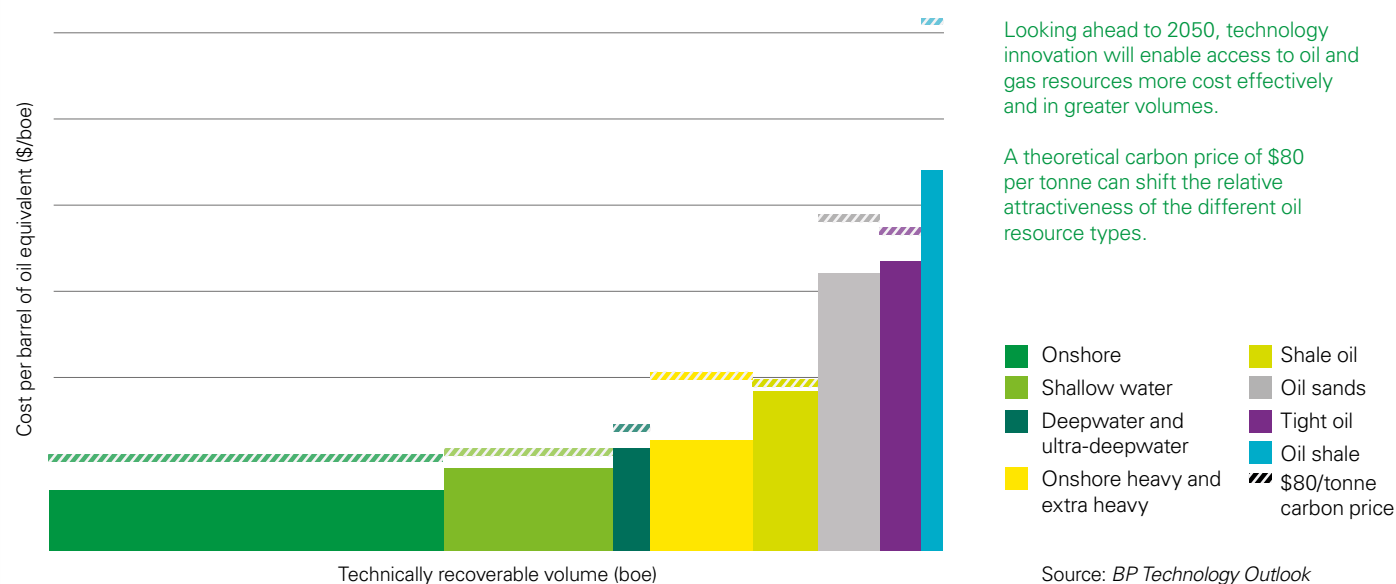


The *BP Technology Outlook* shows how technology can play a major role in meeting the energy challenge by widening energy resource choices, transforming the power sector, improving transport efficiency and helping to address climate concerns out to 2050.

See [bp.com/technologyoutlook](http://bp.com/technologyoutlook)

### Oil resources in 2050: availability and costs

Different oil resource types vary widely in availability and technological cost to develop.



# How we operate

We strive to be a world-class operator, a good employer and a responsible corporate citizen. We are committed to excellence through systematic and disciplined management of our operations.

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

- Safety
- Respect
- Excellence
- Courage
- One Team

▲ Our Cherry Point refinery in the US employs about 900 people and processes more than 234,000 barrels of crude oil a day.

# Business ethics

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

Our code of conduct covers operating safely, responsibly and reliably; respecting and valuing our people; how we work with our partners and suppliers; protecting BP's assets; and working with governments and communities, including our commitment to human rights.

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

We provide our employees with training and communications on how to apply the code's principles. Managers are responsible for helping their teams understand how the code guides the way we work and are expected to have conversations with their teams throughout the year.

Each year, our employees certify that they understand the code, have abided by their responsibilities and have reported any breaches of which they were aware. In 2015 we extended this certification process to include our board members, who all certified during the year.

## Speaking up

We are committed to providing an open environment where our employees, contractors and other third parties are comfortable speaking up whenever they have a question about our code or see something they feel to be unsafe, unethical or potentially harmful.

Employees are encouraged to discuss their questions or concerns with their managers, relevant supporting teams or BP's confidential helpline, OpenTalk. A total of 1,158 people contacted OpenTalk with concerns or enquiries in 2015 (2014 1,114, 2013 1,121).

We look for opportunities to reinforce our culture of speaking up. For example, we identified that the number of concerns raised by our employees in Azerbaijan, Georgia and Turkey was lower than expected. Following a survey, we discovered that employees were not aware of the channels available to raise concerns or were reluctant to use them.

To address this, we delivered more than 100 training sessions to employees, contractors and suppliers. The sessions reinforced the importance of ethical behaviour, explained how to raise concerns and outlined our policy of zero tolerance towards retaliation. Since the programme began in 2013, the number of concerns raised in the region increased from 37 to 58 in 2015.

## Employee dismissals

Consequences for misconduct or retaliation range from coaching and performance management through to dismissal.

Our businesses dismissed 132 employees for non-conformance with our code of conduct or unethical behaviour in 2015 (2014 157, 2013 113). This excludes dismissals of staff employed at our retail service stations.

## Anti-bribery and corruption

We operate in some of the world's highest risk countries from an anti-bribery and corruption perspective, as measured by Transparency International's Corruption Perceptions Index.

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

Our group-wide anti-bribery and corruption policy applies to all BP-operated businesses. The policy governs areas such as the inclusion of appropriate clauses in contracts, risk assessments and training. We provide training to those employees for whom we believe it is most relevant, for example, depending on the nature or location of their role or in response to specific incidents.

Before working with suppliers, we conduct assessments in order to determine the degree of bribery and corruption risk posed. This helps us put mitigation plans in place when needed.

We also check suppliers once contracts are in place. For example, in Upstream we carry out anti-bribery and corruption audits on a risk-prioritized basis to confirm whether suppliers are complying with related contractual terms. We issued a total of 35 audit reports in 2015 (2014 36, 2013 44).

## Lobbying and political donations

We do not use BP funds or resources to support any political candidate or party.

We recognize the rights of our employees to participate in the political process, provided they make it clear that they do not represent BP and do not use BP time, property or equipment. We require employees who plan to seek or accept a role in public office to notify their line manager in advance.

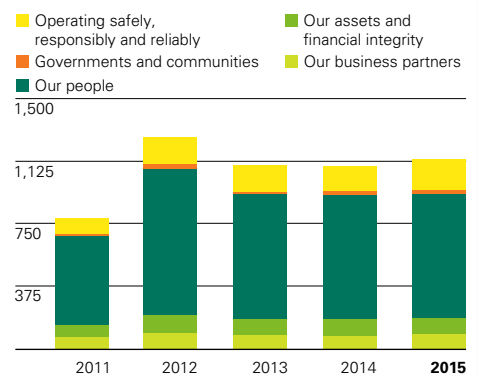
Employees' rights to participate in political activity are governed by the applicable laws in the countries in which we operate. For example, in the US we support the operation of the BP employee political action committee

(PAC) to facilitate employee involvement and to assess whether contributions comply with the law and are publicly disclosed.

The way we interact with governments depends on the legal and regulatory framework in each country. We engage across a range of issues relevant to our business, from compliance with regulation to understanding our tax liabilities to collaborating on social and community initiatives.

In some instances we will engage with governments through lobbying, a process that in many countries is strictly regulated by national laws. For example, in the US we are required to file quarterly and twice-yearly lobbying disclosure reports. Any lobbying activity we undertake is done in accordance with local laws and our code of conduct.

## OpenTalk cases (by code of conduct chapter)



## Find out more

View our code of conduct at [bp.com/codeofconduct](http://bp.com/codeofconduct)

Read our human rights policy at [bp.com/humanrights](http://bp.com/humanrights)

# Our people

BP's performance depends on having a highly skilled, motivated and talented workforce that reflects the diversity of the societies in which we operate.

Our aim is to develop the capabilities of our workforce with a focus on the skills required to maintain safe and reliable operations.

As we adapt to the current low oil price environment, we are reducing activity and simplifying the way we work. Some of this has resulted in job losses. Our employee headcount at the end of 2015 was 4,700 lower than the previous year.

Our total upstream workforce – including employees and contractors – is now 20% smaller than it was in 2013, with a reduction of around 4,000 expected in 2016. We are aiming for an upstream workforce of approximately 20,000 by the end of 2016. We expect to reduce our downstream workforce roles by more than 5,000 by the end of 2017 compared with 2014. By the end of 2015, we had already achieved a reduction of more than 2,000.

## Attracting and retaining the right people

The complex projects we work on – from exploring for new sources of energy through to distributing hydrocarbons safely around the world – require a wide range of specialist skills. We have a bias towards building capability and promoting from within the organization and we complement this with selective external recruitment for specialist roles.

We decided to maintain graduate recruitment in 2015, albeit at a reduced level, with 298 graduates joining BP during the year (2014 670, 2013 814). We have worked to maintain our visibility in the graduate job market to help us attract the best recruits, and we provide them with high quality early development opportunities. For the second consecutive year BP was the highest ranked energy-sector company in the UK in *The Times Top 100 Graduate Employers*.

In 2015 46% of our graduate intake were women and 41% were from outside the UK and US.



## Building in-house capability

We provide a broad range of opportunities for our people – from on-the-job learning and mentoring programmes through to online and classroom-based courses.

We continue to increase our use of technology in order to provide learning opportunities more efficiently across the globe, for example, by launching apps to support on-the-job development for our graduates and leaders. Our average expenditure on learning and development was around \$4,000 per person in 2015.

Through our internal academies, we provide leading technical, functional, compliance and leadership learning opportunities. We have six academies, focusing on our operating management system, petrotechnical skills, downstream, midstream, leadership, and functional skills, including finance and legal.

## Rewarding performance

We offer a competitive reward package to our employees based on what they deliver and how they have demonstrated behaviour reflecting our values. We evaluate this package on an ongoing basis and in 2015 we took the decision to freeze base pay. As part of their performance review, employees set priorities regarding their contribution to safety, compliance and risk management; what they will deliver for the near and long term; and how they will do their job.

We link the remuneration of our executive team to strategy and performance. The structure reflects the long-term nature of our business and the significance of safety and environmental risks. Performance measures for pay related to safety and operational risk include recordable injury frequency, tier 1 process safety events and loss of primary containment.

See [bp.com/remuneration](http://bp.com/remuneration) for information on how we reward our board of directors.



## Employees engaged with para-sports

BP is helping to raise awareness of para-sports as a partner of the International Paralympic Committee. Our employees participate in related events and raise money for para-sports, with funds matched by BP. Our chief financial officer, Brian Gilvary, qualified and represented Great Britain in the age group event at the BP-supported International triathlon union (ITU) world triathlon grand final in Chicago, which also included the ITU paratriathlon world championships.

See [bp.com/paralympics](http://bp.com/paralympics)



# 41%

of our 2015 graduates were recruited from universities outside the UK and US.

A laboratory technician conducts enhanced oil recovery research in Sunbury in the UK.





▲ More than 600 women participated in events to celebrate international women's day at our biofuels operations in Brazil.

### Employee engagement

Each year we conduct a survey to gather employees' views on a wide range of business topics and identify areas where we can improve. We track how engaged employees are with our strategic priorities using our group priorities index – based on questions about their perception of BP as a business and how it is managed in terms of leadership and standards. This measure fell to 69% in 2015 (2014 72%, 2013 72%).

Our survey results show a strong increase in understanding and use of the code of conduct to guide behaviour and that our employees remain clear about compliance with safety procedures, standards and requirements.

However, as expected in the current low oil price environment, the proportion of employees responding that they feel more confident about BP's future than they did the previous year has declined. We also saw a decline in scores related to development and career opportunities.

We understand that employees have concerns about the consequences of the lower oil price. We have established additional communications channels to help address these concerns and support employees through our restructuring processes. For example, our executive team have been holding additional face-to-face town hall meetings. In our upstream business we have introduced a dedicated inbox for queries and regular listening sessions between frontline staff and management, with a commitment to follow up on any issues raised.

### Diversity and inclusion

Our goal is to create an environment of inclusion and acceptance. For our employees to be motivated and perform to their full potential, and for the business to excel, our people need to be treated with respect and dignity and without discrimination.

We continue to make progress in the area of gender diversity and our aim is for women to represent at least 25% of group leaders – our most senior managers – by 2020.

We continue to support the UK government's review of gender diversity on boards, undertaken by Lord Davies in 2011, and maintain an aspiration to increase female representation to 25%. At the end of 2015 there were three female directors (2014 2, 2013 2) on our board of 15. Our nomination committee remains mindful of diversity when considering potential candidates.

We are also committed to increasing the national diversity of our workforce to reflect the countries in which we operate. A total of 23% of our group leaders came from countries other than the UK and US at the end of 2015 (2014 22%, 2013 22%).

Employees have established groups around a range of interests, including gender, ethnicity, sexual orientation and disability. These groups support the business in terms of recruitment, development and motivation of our employees.

A total of 92% of our group and senior level leaders have attended our diversity, inclusion and ethics learning programme. Our intention is for all new leaders at these levels to receive this training within a year of moving into their role.

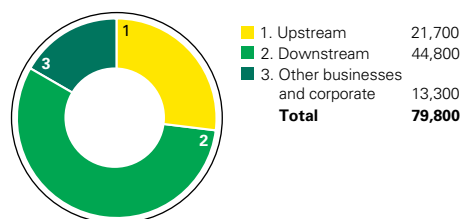
Employee survey scores remain strong regarding the extent to which BP is an environment where people from diverse backgrounds can and do succeed.



90%

of senior leadership roles were recruited from within BP in 2015.

### BP employees by segment



### BP employees by gender (% women)

	2013	2014	2015
All staff	30%	31%	<b>32%</b>
Graduate hires	33%	37%	<b>46%</b>
Group leaders	18%	18%	<b>19%</b>
Executive team	9%	9%	<b>9%</b>

# How we manage risk

We work in a high-hazard industry and risk management is key.

In order to deliver energy to the world safely and sustainably, we must identify and proactively manage risks of many forms, from the strategic and commercial, to the operational.

Our risk management system and policy help us to identify and assess risks across our business and manage them at the appropriate level in BP.

## Strategic and commercial risk

We look at strategic and commercial risks across the group, for example climate change, geopolitical risk and BP's financial resilience.

Public policies relating to climate change and carbon pricing could increase costs and reduce future revenue and strategic growth opportunities for BP. We are working to help make sure our business is sustainable – commercially, environmentally and in a lower-carbon future.

The nature of our business means BP is exposed to a range of political developments around the world and subsequent changes to the operating and regulatory environment. We seek to manage this risk through our relationships with governments and stakeholders. In addition, we closely monitor events and implement risk mitigation plans where appropriate.

External market conditions can impact our financial performance. We actively manage this risk through BP's diversified portfolio, our financial framework, regular reviews of market conditions and our planning and investment processes.

## Operational risk

We prioritize the safety and reliability of our operations to protect the welfare of our workforce, the environment and local communities. Our goal is no accidents, no harm to people and no damage to the environment.

### The three lines of defence

Our operating businesses are our first line of defence. They are responsible for identifying and managing risks and bringing together people with the right skills and competencies to do this. They verify their own conformance with safety and operating requirements and are also subject to independent scrutiny and assurance.

The second line of defence is our safety and operational risk team, which works alongside operating businesses to set clear requirements; maintains an independent view of operating risk, provides assurance on how risks are being assessed and managed; and intervenes when appropriate to bring about corrective action.

Our group audit team is the third line of defence, visiting sites on a risk-prioritized basis, including third-party drilling rigs, to check how they are managing risks.

## BP's operating management system

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

OMS brings together BP requirements on health, safety, security, the environment, social responsibility and operational reliability, as well as related issues, such as maintenance, contractor relations and organizational learning, into a common management system. It sets out the rules and principles that govern key risk management activities such as inspection, testing, competency development and business continuity and crisis response planning.

We review and amend our group requirements within OMS from time to time to reflect BP's priorities and experience or changing external regulations. Any variations in the application of OMS – in order to meet local regulations or circumstances – are subject to a governance process.

OMS also helps us improve the quality of our operating activities. All businesses covered by OMS undertake an annual performance improvement cycle and assess alignment with the applicable requirements of the OMS framework.

## Oversight by the board

We identify certain risks as being a high priority for oversight by the board. For 2016 this includes financial resilience, geopolitical risk, security, ethical misconduct, legal and regulatory non-compliance, trading non-compliance, cybersecurity and incidents associated with the drilling of wells, operating facilities and the transportation of hydrocarbons.

The board delegates some of its oversight activities to its seven committees. These include the audit committee, which monitors the management of financial risk, and the safety, ethics and environment assurance committee (SEEAC), which focuses on non-financial risk.

SEEAC reviewed reports in 2015 on the risk of major security incidents, and BP's management of risks in marine operations, wells, pipelines and facilities. Site visits are an important part of SEEAC's role, allowing direct interaction with operating teams. In 2015 they visited sites in the Netherlands, Oman and Trinidad.

The board established a dedicated committee to monitor geopolitical risk and consider the effect that heightened political or social tensions or changes in key relationships can have on the economic and operating environment for BP.

 See [bp.com/annualreport](http://bp.com/annualreport) for more information on BP's risk management.

## Continuous improvement at Castellón refinery – small steps, great gains

BP's Castellón refinery in Spain can process a variety of crude oils, with a capacity of 110 thousand barrels per day. Since 2009 the refinery has been running an ongoing programme based on employee improvement ideas.

The programme looks at all aspects of what it takes to run a refinery. Employees considered ways to reduce safety risks and operating risks, improve efficiency and drive employee motivation. They looked at how to optimize the refinery's operations and increase profit margins. The refinery used the BP continuous improvement methodology to analyse, prioritize and implement the ideas.

This approach meant the team could deliver improvements in many areas, leading to significant gains overall. In one instance, an employee suggested changes to a steam line layout to reduce the possibility of trips or burns.



This is just one example of the 250-plus process safety and operating risk improvements that have been made since the programme began. To date, around 80% of Castellón's employees have taken part in the process.

The refinery has also seen that the steps to improve safety go hand-in-hand with improving operational reliability. Since the programme began, there has been steady reduction in tier 1 and 2 process safety events – those events with the potential to cause the most harm to people and property. Over the same time, the refinery's plant utilization – a measure of how much crude is being processed – has improved, up from 78% in 2009 to 93% in 2015.

# Managing our environmental and social impacts

We aim to manage environmental and social impacts throughout the life cycle of our operations – from early project planning to operations and decommissioning.

We review our management of material issues such as climate change, water, how we engage with communities and human rights. This includes examining emerging risks and actions taken to mitigate them. We identify areas for improvement and work to address these where appropriate.

## Project planning

Our operating management system (OMS) includes practices that set out requirements and guidance for how we identify and manage environmental and social impacts. The practices include topics such as our management of greenhouse gas emissions (GHG), air quality, workforce welfare and cultural heritage. They apply to our major projects, projects that involve new access, those that could affect an international protected area and some BP acquisition negotiations.

In the early planning stages, we complete a screening process to identify potential impacts associated with these projects. These may include risks to sensitive or internationally protected areas and water availability. We also consider social aspects such as prevalence of corruption and bribery in a host country, local employment and community health and safety. We completed this process for five projects in 2015 (2014 19, 2013 16). This is fewer than in previous years, primarily due to a reduction in major projects in line with the low oil price environment.

Following the screening process, we carry out impact assessments, identify mitigation measures and implement these in project design, construction and operations. For example, when screening for a drilling project in Canada, we identified the potential for cold-water corals in the project area. We plan to conduct surveys prior to activity to identify the exact location of the corals and to determine steps necessary to mitigate potential impacts.

## Operations

Our operating sites can have a lifespan of several decades and our operations are expected to work to manage environmental and social impacts throughout.

Every year, our major operating sites review their environmental performance and set local improvement objectives. These can include measures for improving flaring and GHGs, air quality, or reducing oil spills, waste and impact on biodiversity. Potential impacts on the environment vary by site, according to the location and nature of each operation. We consider local environmental sensitivities and their potential impact on nearby communities in determining which issues require the greatest

focus for impact reduction. At a site close to communities, for example, the immediate concern may be air quality, whereas a remote desert site may require greater consideration of water management issues.

As at March 2016 all of our major operations were in conformance with ISO 14001 with the exception of recently acquired assets and our US Lower 48 onshore business. Lower 48 works to identify and systematically manage the impact of its activities on the environment in line with the highly regulated US onshore market.

Our operating sites also have processes to collect and respond to concerns of local communities.

## Decommissioning and remediation

BP works to restore the environment when remediating or decommissioning a site or in response to an unplanned incident. When evaluating and selecting the most appropriate approach, we take into account environmental and social considerations, such as potential energy use and the views of local communities.

For example, we are completing over two decades of remediation work to enable redevelopment of our former Paulsboro terminal in the US as a commercial port, which will provide jobs and economic opportunities for the local community and surrounding areas.

## Complying with regulations

With operations in more than 70 countries, BP is subject to diverse and complex environmental and social laws and regulations. We manage applicable legal and regulatory health, safety, security, environmental and social requirements, through our OMS.



5 projects completed our environmental and social screening process in 2015.

How we operate

### Find out more

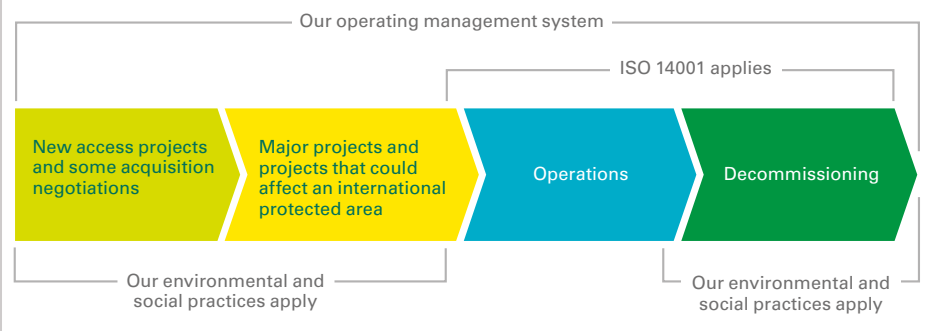


Read more about how our Lower 48 business manages potential impacts on page 30.

See page 47 for more information on community grievance mechanisms.

### Managing environmental and social impacts

Our OMS requires that we manage potential impacts by applying internal practices and external standards such as ISO 14001, at different points in the life cycle of our operations.



# Working with contractors, suppliers and partners

Like our industry peers, we rarely work in isolation – we need to work with contractors, suppliers and partners to carry out our operations.

Our ability to be a safe and responsible operator depends in part on the capability and performance of those who help us carry out our operations. We therefore work with our supply chain on areas such as safety, operational performance, anti-bribery and corruption, money laundering and human rights.

We seek to work with companies that share our commitment to ethical, safe and sustainable working practices. We expect and encourage our contractors and their employees to act in a way that is consistent with our code of conduct. And, our operating management system (OMS) includes requirements and practices for working with contractors.

## Contractor management

In 2015 52% of the 353 million hours worked by BP were carried out by contractors (2014 52%, 2013 54%).

We focus on developing deeper, longer-term relationships with selected contractors. This helps us to take advantage of economies of scale and manage risks. We have global agreements in areas such as equipment, well services, engineering design and supply of key retail assets.

We seek to set clear and consistent expectations of our contractors. Our standard model contracts include health, safety, security and environmental requirements. Bridging documents are necessary in some cases to define how our safety management systems and those of our contractors will co-exist effectively.

## Potentially high consequence activity

Contracts involving work that could result in the most serious risks, according to their potential impact and probability, demand our highest scrutiny. Our selection process for these contractors includes pre-contract quality, technical and health, safety, security and environmental audits, that are carried out on a risk-prioritized basis.

We continue to strengthen our process for working with these contractors in our upstream business. This includes plans that address health, safety and environmental management, contractor self-verification, BP oversight, key performance measures and joint performance review meetings.

## Sharing experience

We are keen to learn from our contractors and share our experiences. We hold workshops with senior executives from BP and our



52%

of the 353 million hours worked by BP were carried out by contractors.



46%

of our upstream production is from joint ventures where BP is not the operator.



Contractors construct a platform in South Korea for our Clair Ridge project in the UK North Sea.



## Q&A

### How do you confirm that contractors are working safely and in a way that is consistent with BP's standards?

Our role is to oversee and be confident that our contractors are following the relevant procedures and management system requirements. In Upstream, we have established a robust system for our third-party contractors who undertake the most high-risk activity on our behalf. It allows us to set expectations, oversee activities and share best practices. As a result, we have seen a greater sense of ownership and improved operating discipline among contractors performing potentially hazardous activity.

We also meet regularly with the leadership of our suppliers and contractors to agree how we can work together to improve performance. We held two global safety forums with our upstream contractors in 2015 and I am encouraged by their level of commitment to take safety to the next level. While we have taken steps to improve our operating discipline, roughly 70% of our operations work is carried out by third-party contractors. So it is imperative we keep communication channels open and work collaboratively with our contractors to drive rigour and disciplined behaviour in support of safe and compliant operations.

**Fawaz Bitar**  
Head of global operations organization, BP

suppliers to provide opportunities for engagement. For example, in 2015 we hosted a forum for our upstream strategic suppliers, where we discussed how to effectively collaborate in areas such as operational safety, increased efficiency in a lower oil price environment and safe and reliable operations.

We are working with Maersk Training to provide additional training opportunities within an immersive simulation environment. This allows BP employee and contractor drilling teams to practice working as an integrated unit.

### Targeted intervention


Our approach is to work collaboratively with contractors in a way that seeks to avoid the need for intervention. Where contractors do not meet our requirements, they may be put on a performance improvement plan.

For example, following poor performance in key areas, we placed an engineering contractor on a performance improvement plan until we observed clear improvement. During this time, we awarded no additional contract work and met regularly with the contractor in order to measure progress.

In some instances, we will dismiss contractors that do not meet our requirements, or are unable to demonstrate improved performance.

### Anti-bribery and corruption

Our code of conduct explicitly prohibits engaging in bribery and corruption in any form. Before working with suppliers, we conduct assessments in order to determine the degree of bribery and corruption risk they pose and to carry out checks once contracts are in place.

 See how we work with suppliers on anti-bribery and corruption on page 21.

### Local suppliers

We work with local suppliers where possible, building the skills of local businesses in order to further develop the supply chain. In Egypt, where we have a successful track record stretching over 50 years, we spent more than \$365 million with local companies in 2015.

 See page 48 for more information on how we support local suppliers.

## Human rights

We seek to make contractual commitments with suppliers that encourage them to adhere to the principles contained in our human rights policy. Most of our standard model contracts now include requirements for our suppliers to respect internationally recognized human rights in their work for BP.

In some locations, we also conduct social performance audits, which cover issues such as forced labour, working hours and conditions and compensation. Our downstream business conducted 28 audits in 2015 to assess potential suppliers as part of our pre-qualification process.

 Read about how our human rights policy relates to our suppliers on page 50.

## Our joint venture partners

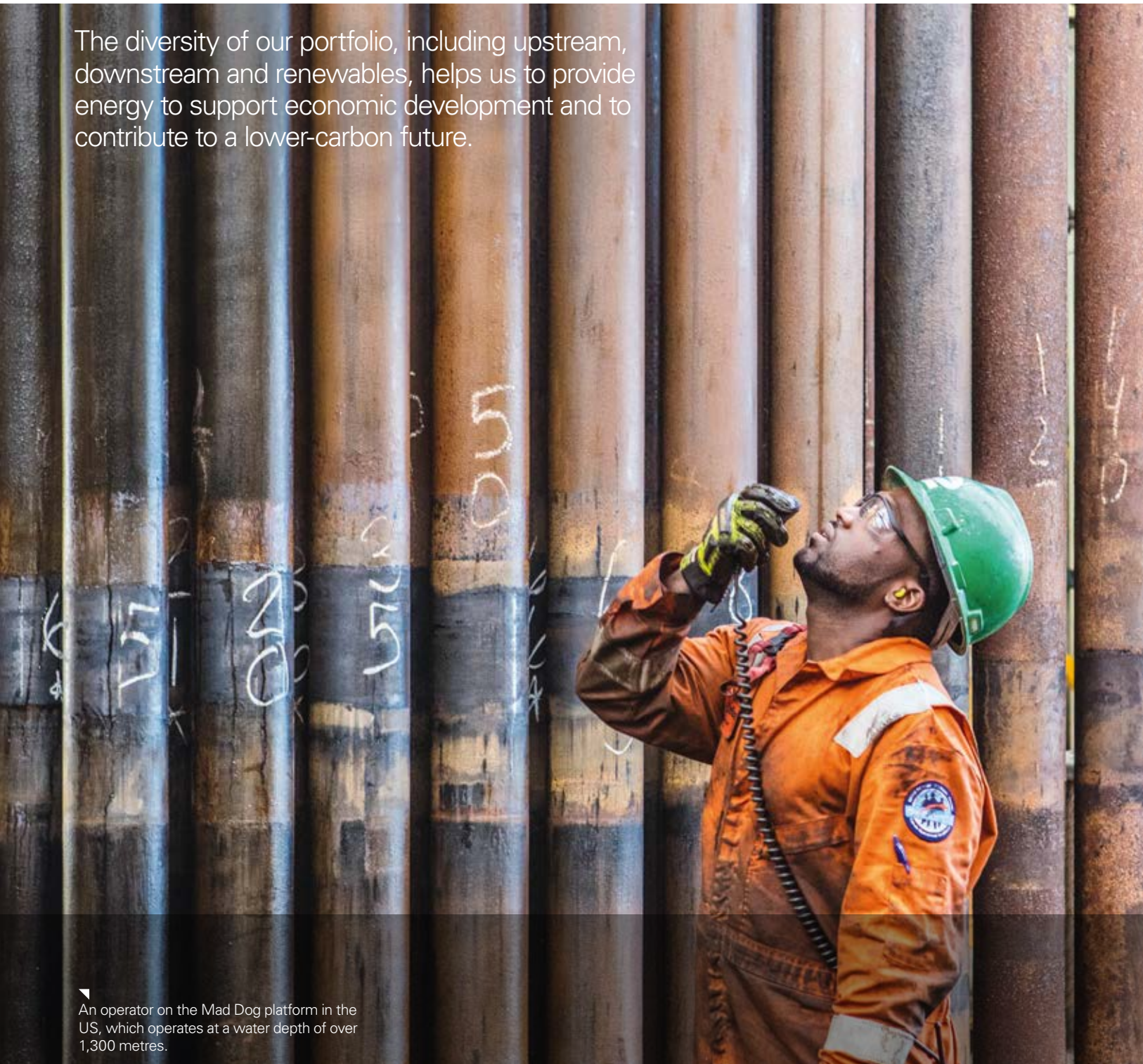
We have a group framework for identifying and managing BP's exposure related to safety, operational, and bribery and corruption risk from our participation in non-operated joint ventures. The framework is helping us to assess risks before making investment decisions and to monitor these on an ongoing basis.

Around 46% of our upstream production and 13% of our refining capacity in 2015 were from joint ventures where BP is not the operator.

Typically, our level of influence or control over a joint venture is linked to the size of our financial stake. Our OMS applies to the operations of joint ventures only where we are the operator. In other cases, one of our joint venture partners may be the designated operator. In those cases our OMS does not apply as the management system to be used by the operator, but is generally available as a reference point for BP businesses when engaging with operators and co-venturers.

# Our activities

The diversity of our portfolio, including upstream, downstream and renewables, helps us to provide energy to support economic development and to contribute to a lower-carbon future.



▲ An operator on the Mad Dog platform in the US, which operates at a water depth of over 1,300 metres.

# Deepwater oil and gas

BP's expertise and technology are helping to extract deepwater oil and gas safely and efficiently.

We have deepwater drilling interests in Angola, Brazil, Egypt, India, Trinidad & Tobago, the UK and US, and we are pursuing further deepwater growth opportunities in Australia and Canada.

## Safe operating in deep water

Producing oil and gas from deepwater reservoirs creates engineering and technical challenges – reservoirs can be 35,000 feet (10,660 metres) below sea level at high pressure and high temperature. We use advanced technology to help us overcome these challenges safely and responsibly, and run tailored training programmes to develop the right capability in our teams.

### Advanced technology

Enhanced equipment and techniques can allow safe access to new sources of oil and gas. For example, together with industry peers, we are applying expertise developed over many years to extract oil and gas from high pressure, high temperature undersea reservoirs that have previously been beyond the reach of drilling equipment. We use management and engineering approaches, such as rigorous equipment testing, that have proven effective in a wide range of settings.

We use advanced technology to monitor conditions in our wells, enhance operational safety and improve drilling efficiency. For example, BP Well Advisor is a digital monitoring system that helps people working both offshore and onshore to view and respond to changes in well conditions and safety equipment. We use BP Well Advisor to monitor key areas such as cementing, pressure testing, and blowout preventers – devices that are used to seal, control and monitor oil and gas wells.

We have remote monitoring capabilities in our Aberdeen, Baku, Houston, Luanda and Stavanger offices that enable us to oversee conditions in our offshore wells as needed. In addition, teams at our monitoring centre in Houston monitor data from our operated rigs in the Gulf of Mexico 24 hours a day through real-time information feeds and video.

### Deepwater capability

Our petrotechnical academy offers training courses in topics such as drilling engineering and well site leadership. In 2015 we supplemented our training with Maersk Training's state-of-the-art simulation facilities. The simulators replicate nearly every critical job on an offshore drilling rig. BP has started using the facilities to run customized exercises for offshore drilling teams, meaning teams made up of employees and contractors can practice scenarios relevant to their particular well to enhance operating and safety performance.

## Environmental impacts

We conduct baseline data collection and ongoing monitoring of specific deepwater environments so we can better manage the potential impacts from our operations, such as disturbance to sensitive areas or marine habitats. This helps us in planning drilling activities, laying pipelines and building offshore platforms, as well as in responding to oil spills.

In Brazil, where BP has been awarded two licence blocks in deep water, we worked with other exploration companies to carry out an initial marine environmental survey as required by the regulator. Images of the sea floor and sediment samples suggested that an area we had initially earmarked for a logistic support vessel contained sensitive habitats. As a result, BP has changed its plans to anchor in this area. In addition, we commissioned Rio de Janeiro Federal University and the University of Florida to perform oil biodegradation experiments using deepwater samples from the area. Their findings will inform our decisions around oil spill response planning.

In Angola we carried out an extensive environmental monitoring survey around our offshore blocks, taking over 43,000 man hours to collect samples from over 150 locations. This builds on baseline and monitoring surveys conducted over a decade to meet regulatory requirements. The survey has further helped our understanding of the biological conditions of our deepwater environment. We discovered underwater features such as deepwater coral reefs, as well as organisms that produce energy from methane, in a process a bit like photosynthesis for a dark environment. The outcomes enabled us to demonstrate that in our operated blocks there has been no measurable impact on the environment since we began our operations.



"One of our teams was put to the test shortly after completing the scenario-based simulator training provided by Maersk Training. They encountered a high pressure sand while drilling an exploration well off the coast of Egypt and dealt with the issue effectively, closing the well quickly and safely. There is no doubt in my mind that the training they completed was a critical factor in preparing them specifically for the sorts of challenges they were likely to encounter drilling this well."

**Jim O'Leary**  
Vice president wells, Africa, BP

### Find out more



[Read about our drilling safety on page 36.](#)

[Find out about our oil spill preparedness and response on page 41.](#)

[See page 45 for more information on working in marine environments.](#)



2,000m

We produce oil and gas from wells in water depths that can be more than six times the height of the Eiffel Tower.

# Unconventional gas and hydraulic fracturing

Natural gas plays an increasingly important role in supplying lower-carbon fuel to meet the world's growing energy needs.

Natural gas has the lowest greenhouse gas (GHG) emissions of any fossil fuel when burnt. With the technologies needed to produce and use this resource widely available today, we expect that natural gas is likely to meet around 26% of total global energy demand by 2035. Shale gas is expected to contribute almost half of the growth in global natural gas supplies between 2014 and 2035.

BP is working to responsibly develop and produce natural gas from unconventional resources including shale gas, tight gas and coalbed methane. Approximately 80% of BP's onshore natural gas production is from unconventional resources. We have operations in Oman and the US and we are evaluating unconventional gas opportunities in other countries. Our US Lower 48 business spans 5.7 million acres with active operations in six states.

We work to reduce and manage the impacts of our operations, including water, chemicals, GHGs and seismic activity.

## Water

BP wells and facilities are designed, constructed, operated and decommissioned to mitigate the risk of natural gas and hydraulic fracturing fluids entering underground aquifers, including drinking water sources. We test the integrity of our wells before commencing fracturing and again when work at the well reaches completion.

We also work to reduce the use of freshwater in our operations. We are trialling a number of water-saving innovations, including new technologies that could make it possible for us to treat water used in fracturing for reuse in our operations. At our Khazzan operation in the remote Omani desert, we treat the wastewater from our sewage treatment plant and reuse it for irrigation, landscaping, road construction and dust suppression. Plans are in place for 2016 to allow us to make multiple uses of water used in pressure testing.

## Chemicals

Water and sand constitute on average 99.5% of the injection material used in hydraulic fracturing. Some of the chemicals added to this water-sand mix, when used in certain concentrations, are classified as hazardous by the relevant regulatory authorities. BP works with service providers to minimize their use where possible. We list the chemicals we use in the fracturing process in material safety data sheets at each site. We also submit data on chemicals used at our hydraulically fractured wells in the US, to the extent allowed by our suppliers who own the chemical formulas at [fracfocus.org](http://fracfocus.org) or other state-designated websites.

## Greenhouse gas emissions

We are working to minimize air pollutant and GHG emissions, such as methane, at our operating sites. For example, we use a process called green completions at our gas operations in the US. This process captures natural gas that would otherwise be flared or vented during the completion and commissioning of wells. We are also using micro-turbines – low-emission generators – and solar energy to power our on-site operations.

Our Khazzan gas project in Oman has been specifically designed to be an inherently low emission concept. For example, we have built a central processing facility that takes away the need for processing equipment at each individual well site, which can be a source of additional methane emissions in gas production.

We have estimated and managed methane and hydrocarbon emissions from our US onshore natural gas operations for more than a decade.

 For more information on GHGs, including methane, see pages 16 and 42.

## Seismic activity

Hydraulic fracturing creates very small earth tremors that are rarely felt at the surface. The underground injection of wastewater, such as for the disposal of water produced from oil and gas reservoirs, may also pose a risk of inducing seismic activity in some areas, but very few events have been documented relative to the large number of disposal wells in operation. Before conducting work, BP assesses the potential risks of induced seismicity resulting from our operations, and we design our operations to mitigate this risk. We apply best practices, reviewing and updating our approaches to reflect lessons learned across the industry.

## Engaging with communities

The development of unconventional resources has moved energy companies into new and often more densely populated areas. We seek to mitigate potential impacts on local communities and address concerns that may be raised during operations such as increased traffic, noise, light, dust, air pollution, visual impacts, disruption of wildlife, and increased pressures on the local infrastructure. For example, we work with the Durango Citizen Advisory Panel, in La Plata County in Colorado, which meets regularly to discuss issues of interest to the local community and BP.



## Q&A

### What governance process and standards apply for your Lower 48 business?

Our US Lower 48 onshore business operates in a highly competitive, regulated and rapidly changing environment and we realized we needed an operating model that could successfully respond and compete accordingly. Though still wholly owned by BP, we began operating as a separate business in 2015 with our own governance, processes and systems. In practice, this means that we apply BP's group operating management system in a way that is appropriate to this dynamic environment. For example, we undertake monthly safety and operational performance reviews, which allows us to drive changes in real-time. And, like all of BP, safety is our number one priority and measure of success.

**David Lawler**  
Chief executive officer, US Lower 48 onshore, BP

## Find out more

Our unconventional gas and hydraulic fracturing issue briefing provides more information on our operations and key stakeholder issues.

Download at [bp.com/unconventionalgas](http://bp.com/unconventionalgas)



# Renewable energy

We operate renewable energy businesses that complement our core business.



▲ Plant operators at Ituiutaba, one of three BP-operated mills producing ethanol from sugar cane in Brazil.

BP currently has the largest operated renewables business among our oil and gas peers. Our activities are focused on biofuels and onshore wind.

## Biofuels

Biofuels can be blended into traditional transport fuels without significant engine modifications or major changes to existing fuel delivery systems. Our biofuels business in Brazil produces ethanol and sugar from sugar cane, and electricity from sugar cane waste. Following the expansion of our Tropical mill in 2014, our three sites produced 795 million litres of ethanol equivalent (which includes ethanol and sugar) in 2015. This represents an increase of 47%.

We are also investing in the development of biobutanol, in conjunction with our partner, DuPont. Compared with other biofuels, biobutanol can be blended with fuels in higher proportions, and is easier to transport, store and manage.

The sustainability of biofuels can vary greatly depending on the raw materials used and agricultural conditions. We plan our investments and run our business to address concerns related to food security, water, responsibility to the community and other sustainability impacts.

Our Tropical mill is certified to Bonsucro, an independent standard for sustainable sugar cane production, and SA8000, the international standard for social accountability and human rights.

## Food security and biodiversity

Brazilian sugar cane is one of the most land-efficient feedstocks for producing biofuels and other products. Less than 2% of the land used for crops or pasture in Brazil is for ethanol production. BP does not plant sugar cane in priority conservation areas, focusing instead on pastureland and areas previously designated for grain production. Around 20% of our sugar cane plantation is set aside to protect local biodiversity.

## Greenhouse gas emissions

Sugar cane ethanol has life cycle greenhouse gas emissions that are 70% lower than conventional transport fuels. In addition, our mills burn bagasse – the fibre that remains after the sugar cane stalks have been crushed – to supply energy for the mills. We also export around 667 gigawatt hours of green power to the local grid. We estimate that as a result of our 2015 ethanol production, approximately 0.7 million tonnes of carbon dioxide (CO<sub>2</sub>) was avoided, equal to 334,000 fewer European cars on the road for a year.

## Water

Sugar cane cultivation can potentially increase pressure on water resources. The Goiás region in Brazil where we operate is especially well suited to sugar cane agriculture because the rainy and dry seasons match the needs of the sugar cane's growing cycle. The water intensity of our Brazilian biofuels operations averages around 13 kilograms of water per kilogram of sugar and ethanol, which compares favourably to that of many agricultural food crops within the region.

## Working in the community

We work to understand both the potential impacts of our operations in Brazil and the needs of the local community. Our environmental and social programmes focus on areas such as road safety, sustainable sugar cane production and empowerment of local people.

For example, we have taken steps to increase the number of women in our agricultural workforce. Our activities include education and training in sugar cane cultivation as well as efforts to open up opportunities for local women in this predominantly male occupation. We are seeing positive results, with 325 female agricultural workers in 2015 (2014 216, 2013 78). This brings women's participation up from 2.2% of our agricultural workforce to 6.8% in two years.

## Wind energy

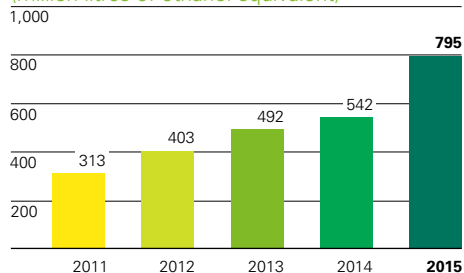
BP holds interests in 16 onshore wind farms in the US. Our net generating capacity from this portfolio, based on our financial stake, is 1,556 megawatts of electricity. This is enough to power all the homes in a city the size of Dallas. We calculate that our wind activities helped avoid around 2.7 million tonnes of CO<sub>2</sub> in 2015.

BP also runs two wind farms on our refinery sites in the Netherlands, operating on a much smaller scale, with 32 megawatts of generating capacity, avoiding around 20,000 tonnes of CO<sub>2</sub> emissions.

In our US operations, BP follows US Fish and Wildlife Service guidelines, designed to help minimize impacts of wind farms on wildlife and their habitats. We seek to reduce hazards to wildlife that come into contact with our wind turbines. For example, we have slowed the movement of the turbine blades at night during peak bat-migration season. This blade feathering reduces bat mortality by as much as 30%.

## Biofuels

(million litres of ethanol equivalent)



# Oil sands

BP is working with our partners to develop Canada's oil sands responsibly.

Canada's oil sands are the third-largest proven crude oil reserves in the world, after Saudi Arabia and Venezuela. Oil sands projects can remain productive for many years – typically 30-50 years with today's technology. Working alongside our partners, we are developing this resource to help meet the growing demand for energy and ensure future energy security in a changing world.

## Our projects

BP is involved in three oil sands lease areas – Sunrise, Pike and Terre de Grace – all of which are located in Alberta.

The Sunrise project, operated by Husky Energy, began producing oil in early 2015 and is currently producing approximately 20,000 barrels per day. Pike, operated by Devon Energy, is at the design stage. Terre de Grace, which is BP-operated, is currently under appraisal for future development.

Where we are not the operator of these assets, we work with our partners to confirm our projects are planned, overseen, managed and monitored effectively. All operators are required to meet or exceed industry practice and regulatory requirements.

Our decision to invest in Canadian oil sands projects takes into consideration factors including commercial viability, impacts on the landscape, greenhouse gas (GHG) emissions, water use and local communities.

## Commercial viability

BP requires oil sands projects, like all of its investments, to be commercially viable over the life of the project. In light of changing global oil prices, some of our oil sands opportunities remain under evaluation as we assess the best manner and timing of development.

## Impact on the landscape

Due to the depth at which our oil sands resources are located, BP and our partners use or plan to use a production technology called steam assisted gravity drainage (SAGD). SAGD involves pumping steam into the oil sand reservoir through a horizontal well to heat the oil, which is then extracted through a second, lower horizontal well. This process results in less land disturbance than mining as the operations have a smaller physical footprint and do not require tailings ponds.

Alongside our partners, we work to promote the regeneration of habitat after the completion of our activities. This includes tree planting, landscape assessments and erosion control. In 2015 we planted approximately 12,000 trees at Terre de Grace, which will help to restore the landscape following our exploration programme.

## Greenhouse gas emissions

In 'well-to-wheels' studies – which measure GHG emissions from producing the oil (well) through to combustion (wheels), crude produced from oil sands applying SAGD technology is around 8% more GHG intensive than the average crude refined in the US. We are working with our partners to reduce emissions and continue to meet the comprehensive and rigorous regulatory requirements.

We are working to deliver improvements through heat integration and recovery techniques in our processing facilities. These allow us to use energy that would otherwise be lost into the atmosphere, for example to improve our operational performance or heat buildings on site. We are exploring new high-efficiency boiler options along with lower-carbon fuel alternatives. We also aim to reduce energy use at well sites through the use of insulated tubing and electric submersible pumps. We encourage our partners to use the best available energy efficient technologies in the design of plant and field facilities.

## Water

Water supply and management are key elements in planning a SAGD project. BP is committed to maintaining a high level of water conservation and our oil sands projects are designed to meet or exceed regulatory requirements. At Sunrise, the water used to make steam is primarily recycled from the wells. Where additional water is required, this is recycled from other operators in the area or drawn from deep underground aquifers that are not suitable for human consumption. Any water that cannot be recycled is injected into a deep disposal well, isolated from drinking water aquifers.

## Local communities

BP recognizes that some aboriginal communities living near Alberta's oil sands region are concerned about the potential impacts of oil sands development. We engage with local communities, including neighbouring First Nations and Métis, on activities relating to the Terre de Grace lease. We work to maintain relationships with local communities through regular meetings, field site visits – including those by our board committee for sustainability issues – and support for local community events.

Our partners operating the Sunrise and Pike projects have similar stakeholder consultation processes and keep us informed of developments.

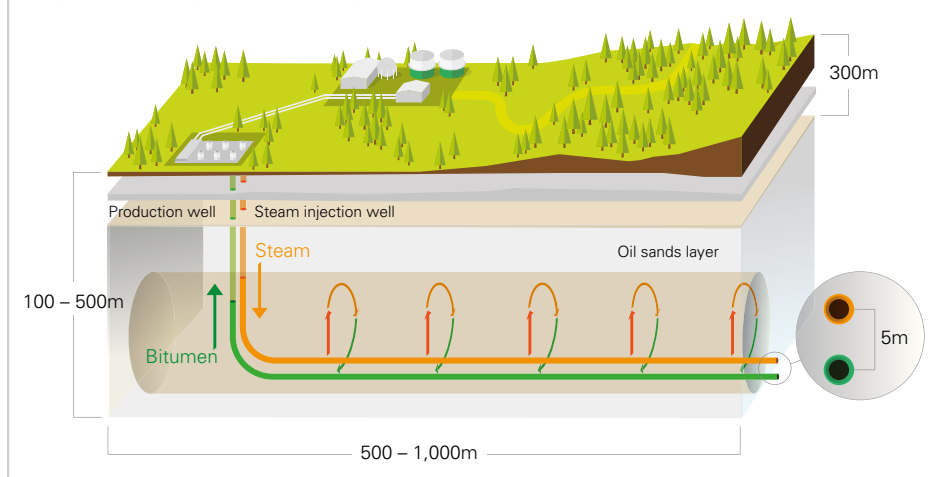
### Find out more



Our oil sands issue brief provides more information on our projects and key stakeholder issues. Download at [bp.com/oilsands](http://bp.com/oilsands)

## Steam assisted gravity drainage

Our partners use a production technique called SAGD at Sunrise oil sand sites.



# The Arctic

We operate nine onshore fields in Alaska. Our offshore interests in the Arctic are currently limited to areas for exploration.



◀ In Alaska temperatures can fall below freezing for more than nine months of the year. We enclose our facilities to continue operating safely in these harsh weather conditions.

The Arctic offers opportunities to help meet the world's growing energy needs, but there are also specific challenges due to its unique nature. These challenges range from environmental, social and political, to operational, technological and commercial.

## Our working interests

BP has operated in the US Arctic for several decades, opening our first office in Alaska in 1959. We operate nine onshore fields on Alaska's North Slope.

In the offshore Arctic, BP has a largely non-operated position. We have investments in areas including the Barents Sea, Greenland and the Canadian Beaufort. We continue to assess opportunities, proceeding only where we believe it makes commercial sense and we understand and can manage associated risks and impacts.

We have decided with our partner and operator, Imperial Oil, to defer the proposed Beaufort Sea exploration drilling programme. The joint venture, in which we hold a 50% non-operating position, will continue to maintain a presence in the Beaufort, conducting a multi-year programme to collect critical ice data and continuing to work with local communities to define business, employment and training opportunities.

### Rosneft

We hold a 19.75% share in Rosneft, Russia's largest oil company, and remain committed to our strategic investment while complying with all relevant sanctions. BP does not currently have operations in the offshore Russian Arctic or directly partner with Rosneft on any of its offshore Arctic licences.

## Working safely

Our operations in Alaska have government-approved land, air and water use permits and oil spill response plans that consider the sensitivity

of the Arctic. We share our knowledge and experience in the Arctic with our partners to help deliver safe and responsible operations in this sensitive environment. For example, we are working with new North Slope operators to share our experience in pipeline inspection and management.

We are also working with others in the oil and gas industry to develop consistent operating standards for the Arctic that address areas such as the working environment, environmental monitoring, ice management and Arctic offshore structures. We worked with the International Maritime Organization (IMO) to develop an international code of safety for ships operating in polar waters and we are also contributing to the development of IMO safety guidance on operational limitations in ice.

## Understanding the Arctic environment

We have been studying the environment on Alaska's North Slope since before start-up of the Prudhoe Bay oil field in 1977. We continue to support research to further understand polar bear behaviour. And, we support long-term monitoring of nesting birds on the tundra to gain a better understanding of potential impacts from industry, climate change and predators.

## Working with local communities

Arctic communities depend on the natural environment for their livelihoods and cultural heritage. We acknowledge the importance of respecting their unique cultures and ways of life. We also recognize that local knowledge and experience can enhance our operating approach. For example, through our work with the North Slope community, we use a technique for grass replacement, where appropriate, that allows for quicker revegetation of disturbed tundra.



55+

years working in the US onshore Arctic.

# Safety

Everything we do depends on the safety of our operations, our workforce and the communities around us. We strive to create and maintain a safe operating culture, putting safety front and centre of everything we do.

▲ An offshore team leader carries out an inspection on our Andrew platform in the North Sea, UK. The platform has recently been refurbished to improve its integrity and operational efficiency as part of a larger project aiming to extend its productive life by a decade.

# Preventing incidents through process safety

Major accidents or spills are infrequent, but can result in serious harm to people and the environment.

Process safety is the application of good design and engineering principles, as well as robust operating and maintenance practices, to avoid accidents. Our approach builds on our experience, including learning from incidents, operations audits, annual risk reviews and sharing lessons learned with our industry peers.

## A proactive approach

We undertake process safety reviews to identify hazards, assess risks and define risk reduction measures to prevent accidents from happening. We focus on managing the highest priority risks associated with our operations, targeting our efforts at keeping our products safely within pipes and containers. For example, following a review at our Rotterdam refinery in the Netherlands, we installed high-level alarms that sound when storage tanks are close to exceeding safe operating limits, and automatic cut-out systems to prevent them spilling over.

## A learning organization

We analyse performance data and assurance insights to help us understand how well our systems are working, map early trends, and ultimately get a better understanding of our key safety risks. This means we can target our process safety improvement efforts appropriately. For example, when we found that control of work was a contributing factor to process safety near misses in our upstream business, we carried out training sessions in the correct application of safety procedures to seek to address this.

Analysing performance data and learning from incidents are just as important at a local level. Our Merak petrochemicals plant in Indonesia established a formal weekly process in 2013

to investigate incidents, capture learnings and track leading indicators. This regular review has contributed to improvements across a number of leading process safety metrics, helping the plant manage its operations within safe operating and design limits. Operating reliability has also gone up by 14% since 2013.

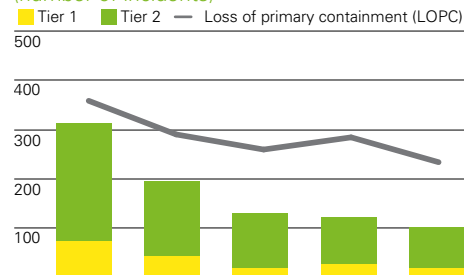
## Our performance

We track the number of process safety events occurring across our upstream facilities and downstream plants. This includes unplanned or uncontrolled releases of materials causing harm to people or the environment, damage to equipment or exceeding threshold quantities.

We also track loss of primary containment, which includes unplanned or uncontrolled releases of our products from pipes, containers or vehicles within our operational boundary, excluding releases of non-hazardous substances such as water. We seek to record all losses of primary containment regardless of the volume of the release, and to report externally on losses over a certain severity threshold.

We have seen improvements in our process safety performance over the past five years. This has been true across our upstream and downstream businesses, with fewer tier 1 process safety events, fewer leaks and spills and fewer recordable injuries. At the same time, the reliability of our rigs and refineries has improved. We believe this shows that the rigour needed to produce safe operations tends also to produce reliable operations. We will maintain our focus on systematic safety management, including self-verification and testing the effectiveness of our risk mitigation measures.

## Process safety events (number of incidents)



	2011	2012	2013	2014	2015
<b>Tier 1</b>	74	43	20	28	<b>20</b>
<b>Tier 2</b>	241	154	110	95	<b>83</b>
<b>LOPC</b>	361	292	261	286	<b>235</b>

Tier 1 process safety events – as defined by the American Petroleum Institute in RP-754 – are losses of primary containment causing harm to a member of the workforce, costly damage to equipment or exceeding defined quantities. Tier 2 events are those of lesser consequence.

Our figures for loss of primary containment in 2014 and 2015 include increased reporting due to the introduction of enhanced automated monitoring for remote sites in our US Lower 48 business. Using a like-for-like approach with prior years' reporting, our 2015 loss of primary containment figure is 208 (2014 246).

## Self-verification – there's an app for that!

A BP-commissioned app loaded onto tablet computers is helping our global wells organization monitor and improve operating discipline, reducing safety incidents related to incorrect following of procedures.

Experience tells us that one of the most effective ways to drive down operational risk is to systematically check that the work being carried out at our sites is in accordance with the relevant management systems – this is self-verification. Getting these checks right on drilling rigs, where teams switch in and out with shift rotations and around 80% of the workforce is made up of contractors, is paramount.

Well site leaders use the app, 'eWells', to record and share inspection data. They must log in on a weekly basis to confirm that they have read and understood new safety alerts, and undertaken required follow-up actions. The resulting information is uploaded automatically to a central database, meaning safety and operational risk experts can review the information without delay and share any significant findings directly with rigs and well sites around the world.

The app has been cited as a contributing factor to the marked reduction in safety incidents we have seen since its introduction, including a 33% reduction in dropped object incidents across our wells operations in 2015. Data from the app serves to help our sites identify potential weaknesses in our operating approach and informs risk, performance and planning reviews.




# Drilling safety

Safe, efficient and reliable drilling operations are critical to the delivery of our upstream activities.

Our global wells organization manages BP wells operations around the world, whether in deep water or onshore. The centralized team is responsible for the drilling practices underpinning our efforts to prevent incidents throughout the life of a well and mitigate impacts should they occur. It is also responsible for developing the right skills and competencies in the workforce.

## Advanced technology

Technological innovation has enabled safe and reliable operations even as the industry has moved into deeper water and new, more complex geologies. We use technology to monitor conditions over the lifetime of our wells. For example, we have piloted the use of fibre-optic sensing technology to detect integrity problems and sand movement within our wells, which can cause leaks, blockages and corrosion. As a result of preliminary surveys at our Valhall platform in the North Sea, we will be able to use this technology to help us identify blockages and assess any damage in a given well, including the type of damage and where it is located. This will help us plan maintenance and decommissioning work.

 See page 29 for more information on deepwater oil and gas.

## Working with industry peers

We share expertise and work to promote common standards across the industry. For example, in 2015 we worked with industry peers to publish global definitions of well control incidents, providing a common way to report and share lessons learned. We also continued our work with other organizations to develop joint industry standards in areas such as subsea well control equipment and high pressure, high temperature and subsea drilling equipment.

## Completing the Bly Report recommendations

We have completed all 26 recommendations made by BP's investigation into the Deepwater Horizon accident, the Bly Report. In doing so,

we have acted to enhance blowout-preventer reliability, well control, well integrity and cementing, verification and risk management, drilling capability and training. The programme has involved significant work both within BP and with our service providers and contractors: developing new standards and enhancing existing standards, carrying out hundreds of audits, site visits to our drilling locations around the world, and training over 3,000 individuals during more than 130 workshop sessions.

## Independent assessment

The BP board appointed Carl Sandlin as independent expert in 2012 to provide an objective assessment of BP's global progress in implementing the recommendations from the Bly Report. He also provided process safety observations and his views on the organizational effectiveness and culture of the global wells organization.

Over the period of his appointment, Mr Sandlin met regularly with board members and wells organization leadership and reviewed the standards and practices developed to complete the recommendations. He made three visits to each of the regional wells teams with active drilling operations, meeting key personnel and drilling contractors on site.

Mr Sandlin's engagement came to a close in February 2016 after he reported to the board's safety, ethics and environment assurance committee that all 26 Bly Report recommendations had been closed out to his satisfaction. He stated that the idea of safety as a top priority is firmly ingrained throughout the global wells organization and noted an increase in the degree of rigour and engagement at all levels. He recommended the organization build on the foundations established by the recommendations and maintain its focus on continuous improvement in the areas of safety culture, self-verification and training.



## Q&A

### How have the Bly recommendations made your drilling operations safer, and how do you maintain this?

Completing the Bly Report recommendations has been a huge undertaking for BP and has led to fundamental change in how we manage risk in our drilling operations. Now we're working hard to make sure our new and enhanced practices and procedures are understood and adhered to. We've invested in our people – so they have the right capabilities and work in a systematic fashion, regularly checking their own work.

But there is always more we can do. In the spirit of continuous improvement, we carry on challenging and improving what we do.

I'm proud of the commitment I see demonstrated by our drilling personnel, which is keeping this momentum going. The recommendations, now complete, live on as part of our operating management system, helping us deliver safe, reliable and competitive wells.

**Bernard Looney**  
Chief operating officer, production, BP

## Gulf of Mexico: Independent monitors

Two independent monitors – an ethics monitor and a process safety monitor – were appointed under the terms of the criminal plea agreement BP reached with the US government in 2012. Under the terms of the agreement, we are taking additional actions, enforceable by the court, to further enhance ethics and compliance across BP and the safety of its drilling operations in the Gulf of Mexico.

The ethics monitor delivered an initial report early in 2015. He delivered a second report later in the year under a separate administrative agreement with the US Environmental Protection Agency. Recommendations from the two reports largely relate to BP's ethics and compliance programme and code of conduct, including its implementation and enforcement. The recommendations have been consolidated and agreed, and BP is now in the process of implementing them. The ethics monitor is meanwhile conducting a follow-up review as the next phase of his engagement.

The process safety monitor reviews and provides recommendations concerning BP Exploration & Production Inc's (BPXP) process safety and risk management procedures for deepwater drilling in the Gulf of Mexico. BPXP is the BP group company that conducts exploration and production operations in the Gulf of Mexico. The process safety monitor also submitted a report in 2015. Following discussions between BPXP, the process safety monitor and the US Department of Justice, the recommendations have now been finalized and implementation by BPXP is underway.

# Security and crisis management

The scale and spread of our operations means we must prepare for a range of possible business disruptions and emergency events.

Potential threats to our business are not always predictable and come in many forms, such as earthquakes, extreme weather, hostile physical or cyber attacks, political conflicts, health alerts and major accidents. We have processes in place to try to anticipate them and to be ready if a crisis or incident occurs.

## Security management

BP monitors for, and aims to guard against, hostile actions that could cause harm to our people or disrupt our operations, including physical and digital threats and vulnerabilities.

We assess risk on an ongoing basis in those operating regions that are affected by political and social unrest, terrorism, armed conflict or criminal activity. Our central security team provides guidance and support to our businesses through a network of regional security advisers. We continue to monitor threats globally and, in particular, the situation in the Middle East and North Africa.

Following the armed terrorist attack on the In Amenas gas plant in Algeria in 2013, BP and Statoil continue to work with Sonatrach, the Algerian state oil and gas company, and the Algerian authorities on a programme of further enhancements to the joint venture's security systems and assurance of their ongoing effectiveness.

BP is a signatory to the Voluntary Principles on Security and Human Rights, which are designed to help companies maintain security while promoting respect for human rights.

 See page 50 for more information on security and human rights.


## Cyber threats

Cyber attacks present a risk to the security of our information, IT systems and operations. We collaborate closely with governments, law enforcement agencies and industry peers to understand and respond to new and emerging cyber threats. We also monitor our IT systems for suspicious activity and have a 24-hour monitoring centre in the US tasked with this. We promote good cybersecurity behaviours in our workforce through easy-to-understand policies and instructional videos. Campaigns and presentations on topics such as email phishing and protecting our information and equipment have helped to raise employee awareness of these issues.

## Crisis management

Crisis and continuity management planning helps us keep our people safe, respond effectively to emergencies and avoid potentially severe disruptions in our operations. In addition to carrying out routine monitoring and an annual risk assessment process, our businesses are expected to carry out exercises at both a local and regional level to test their preparedness to respond.

For example, in 2015 we carried out a two-day oil spill response exercise involving a drilling rig in the UK North Sea. The exercise involved more than 150 people from across our North Sea business as well as relevant government agencies. It gave those responsible for oil spill response from different teams within the region the opportunity to test joint oil spill preparedness plans, supported by coaching from BP's central response team.

 For more information on oil spill preparedness and response see page 41.



## Q&A

### How big a risk is cybersecurity for BP?

News headlines frequently contain reports of cyber attacks stealing huge volumes of information or, increasingly, causing damage and disrupting business operations. These events have demonstrated how quickly systems once believed to be secure, can become vulnerable. This complex, fast-changing landscape, and BP's reliance on technology, mean that cybersecurity is a risk BP takes very seriously. Cybersecurity is one of the company's highest level risks and is monitored by the board. We take an intelligence-led approach to evolve our cyber defences and response, in line with the fast-changing threats.

**Daniel Barriuso**  
Chief information security officer, BP



 Members of BP's board visited our cybersecurity centre in Houston in the US.

# Health and personal safety

We strive to create and maintain safe and healthy working environments.



We are committed to keeping people safe, whether they are working on our sites or living in communities near our operations.

## Personal safety

Each member of the workforce has an obligation and the authority to stop unsafe work. We provide our operations personnel with training on identifying hazards and addressing risks associated with tasks. We have 'golden rules' aligned to our operating management system that guide our workers on staying safe in situations with the potential to cause most harm. Although the rate of serious personal safety incidents has declined since BP originally introduced the rules in 2003, we have updated them to signal their continued importance in these high-risk areas.

Creating the right safety culture at our sites is important. It takes strong leadership and an active commitment to safe operating from all members of the workforce. For example, our Frontignan fuel terminal in France passed a milestone in 2015 of four years without a single day away from work case. They achieved this by focusing on good practice in contractor management, tightening up on adherence to safety procedures, and clear, consistent communication from management about the duty to stop unsafe work.

## Our performance

We monitor and report on key workforce personal safety metrics and include both employees and contractors in our data. In 2015 BP reported one workforce fatality in Turkey that occurred when a ceiling collapsed during renovations at a recently acquired retail site. We are saddened by this death and continue to dedicate ourselves to eliminating injuries and fatalities in our work.

We measure our workforce recordable injury frequency, which is the number of reported work-related incidents that result in a fatality or injury (apart from minor first aid cases) per 200,000 hours worked. We also measure our

day away from work case frequency, which is the number of incidents per 200,000 hours worked that resulted in an injury where a person is unable to work for a day (shift) or more.

Both our recordable injury frequency and our workforce day away from work case frequency improved in 2015. Although this is encouraging, we continue to focus our efforts on safety to reduce incidents.

## Health and wellbeing

We aim to manage occupational risks and reduce exposure to hazardous substances. As part of this, we have piloted a new process to recommend internal occupational exposure limits for substances such as hydrogen sulphide. We plan to extend this to other priority substances in 2016.

Our health programmes consider global concerns, such as the possibility of an influenza pandemic or a disease like ebola. We also have programmes around the world to help improve the health of communities in which we operate.

We run programmes to promote healthy lifestyles, such as online training modules on fatigue, stress, office ergonomics and travel health. Our fatigue module, which has been viewed 20,000 times, offers strategies to improve sleep quality and combat tiredness, warning of the impacts fatigue can have on both health and work outcomes.

## Product stewardship

We aim to manage our products throughout their life cycle to meet customer and legal expectations and intended performance.

We assess our products to identify any potential health, safety or environmental aspects and to verify compliance with chemical control, product safety and hazard communication regulations, monitoring developments in regulation globally.

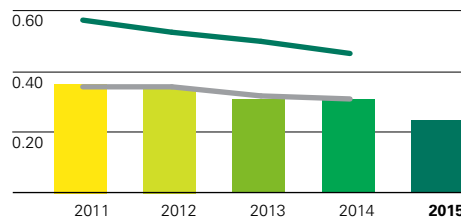
We work with industry, government, and others to advance knowledge about the safe use of our products.



Our golden rules for safety focus on areas such as working at height, lifting operations and driving safety.

## Recordable injury frequency – workforce (per 200,000 hours worked)

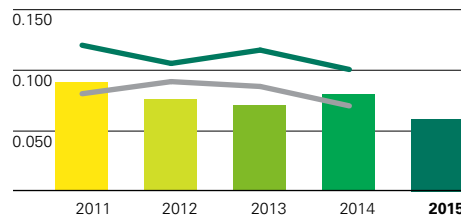
— American Petroleum Institute US benchmark<sup>a</sup>  
— International Association of Oil & Gas Producers benchmark<sup>a</sup>



	2011	2012	2013	2014	2015
<b>Workforce</b>	0.36	0.35	0.31	0.31	<b>0.28</b>
Employees	0.31	0.26	0.25	0.27	<b>0.20</b>
Contractors	0.41	0.43	0.36	0.34	<b>0.28</b>

## Day away from work case frequency – workforce (per 200,000 hours worked)

— American Petroleum Institute US benchmark<sup>a</sup>  
— International Association of Oil & Gas Producers benchmark<sup>a</sup>



	2011	2012	2013	2014	2015
<b>Workforce</b>	0.090	0.076	0.070	0.081	<b>0.063</b>
Employees	0.101	0.078	0.074	0.091	<b>0.063</b>
Contractors	0.080	0.074	0.066	0.072	<b>0.059</b>

<sup>a</sup>API and IOGP data reports for 2015 are not available until May 2016.



# Transportation safety

We work to safely transport our people and equipment to our sites, and fuel to our customers.

BP is a global business with operations in remote locations so safe transportation of our people and products is an important focus area for us.

## Driving safety

Driving safety is a priority because vehicle-related incidents remain one of the key risks facing our industry. In 2015 alone, BP employees and contractors drove nearly 600 million kilometres, which is the equivalent of 15,000 journeys around the world. Transporting fuel from refineries to service stations, and other downstream activities, account for most of these kilometres.

We rely on a variety of metrics to monitor our driving safety performance. For example, we track our severe vehicle accident rate, which includes accidents that result in death, injury, a spill, a vehicle rollover or serious vehicle damage. We also track our total vehicle accident rate, which is the sum of all on-road and off-road motor vehicle accidents per million kilometres driven. In 2015 there were 637 reported vehicle accidents, and four third-party fatalities.

We provide guidance on road safety, including what constitutes a fit-for-purpose vehicle and the need to wear a seatbelt. We tailor our programmes to the local context and where possible we work to extend the reach of BP programmes to local communities.

We share lessons learned from incidents globally and we have seen a significant decline over the past 10 years in the number of vehicle-related fatalities associated with our work. However, two countries where we have seen workforce and third-party fatalities over the past five years are Brazil and South Africa. We have been using in-vehicle camera technology to record potentially

risky driving behaviours and using the video clips as a coaching aid to improve driving technique. Drivers in our lubricants business in South Africa managed on average to halve the number of video clips requiring coaching in the month following their first intervention, with a consistent decline in the months that followed.

## Rail safety

Our sites receive oil and gas products delivered by rail using both BP-owned or leased and third-party rail cars. Much of this is in the US where our use of railways has increased following our modernization project at Whiting refinery and the construction of a new rail terminal at our Cherry Point refinery. For example, at Cherry Point we receive on average 45 thousand barrels of crude oil by rail per day.

Our railcars have enhanced safety features such as insulation to protect cargo in the event of a fire, and a protective shell to defend against puncturing and resulting spills or releases.

## Aviation safety

We use a variety of aircraft, often in challenging conditions. Our safety requirements cover the approval of aviation operators, contracting for aviation services, and the safe management of any aircraft operated on behalf of BP.

There have been a number of incidents involving helicopters in the North Sea over the past few years. Oil and gas companies, helicopter suppliers and regulators have collectively analysed these events and as a result, the oil and gas industry is using enhanced emergency breathing systems for offshore helicopter passengers in the UK and is evaluating plans for a wider roll out of these systems.

We have entered into aircraft sharing agreements in the Gulf of Mexico, Norway and Trinidad & Tobago in an effort to reduce the number of aircraft and flights required. We are continuing to explore similar types of arrangements in other geographic areas where this strategy could be implemented.

## Shipping safety

We transport our products across oceans, around coastlines and along waterways, using a combination of BP-operated and chartered vessels. All are subject to our health, safety, security and environmental requirements.

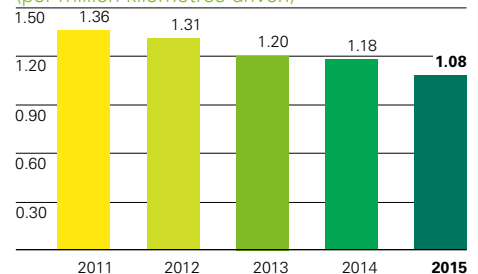
To help avoid major spills, all ships in our managed international fleet are double-hulled. We continue to invest in our fleet, for example, 28 deep sea oil tankers and six LNG tankers are on order and planned for delivery into the BP-operated fleet between 2016 and 2019. We have marine assurance requirements for all oil and gas transport vessels that we hire for specific periods or voyages.

BP seeks to avoid known areas of pirate attack or armed robbery. Where this is not possible, we will continue to transit vessels through these areas, adopting heightened security measures.

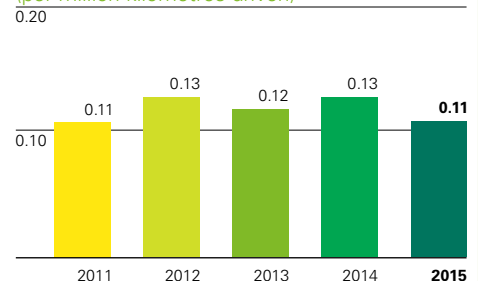
Preparing to transport our people to work a shift on Andrew platform in the UK North Sea.



**Total vehicle accident rate**  
(per million kilometres driven)



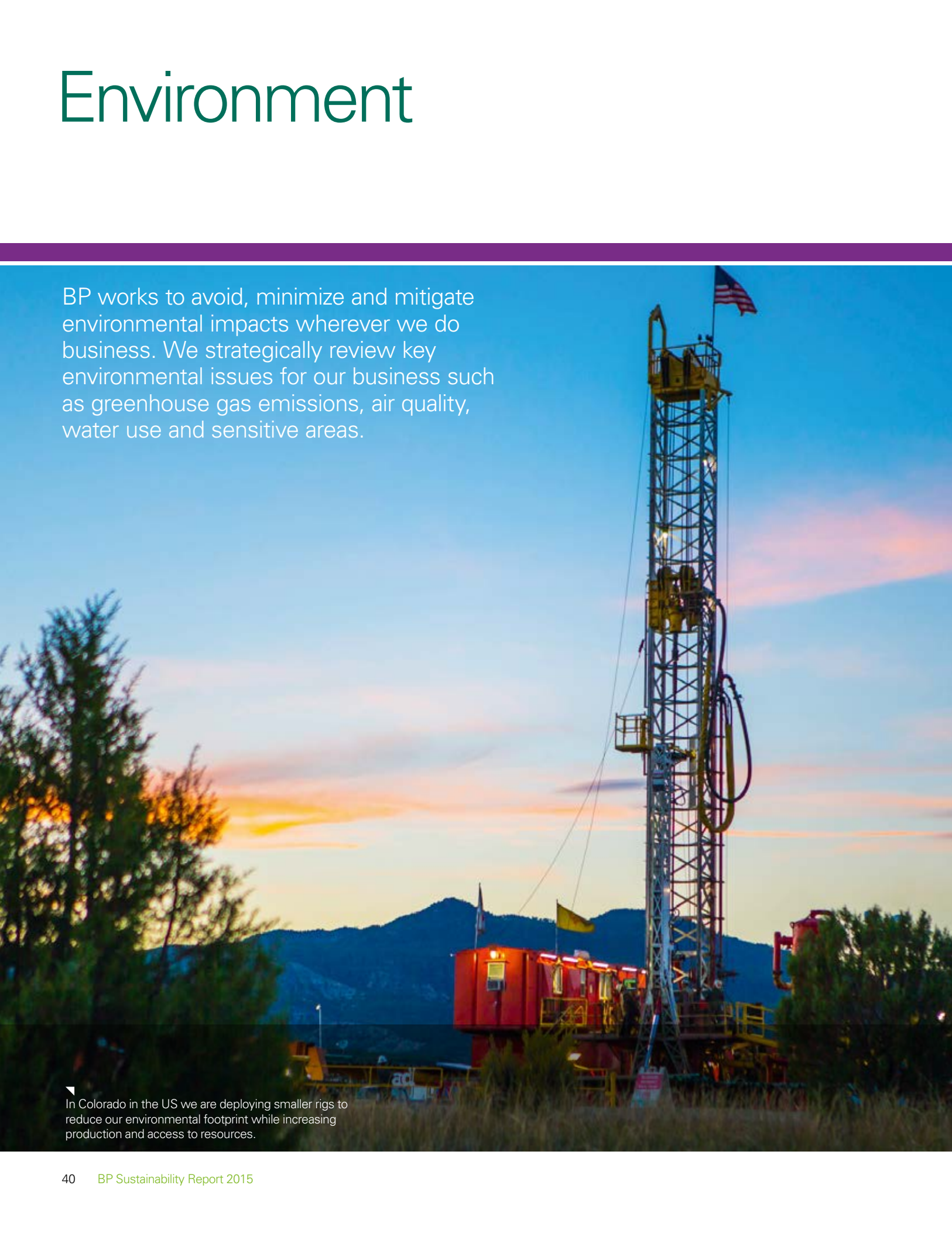
**Severe vehicle accident rate<sup>a</sup>**  
(per million kilometres driven)



<sup>a</sup>We will be adopting a new severe vehicle accident rate definition for 2016 reporting to align with industry practice.

# Environment

BP works to avoid, minimize and mitigate environmental impacts wherever we do business. We strategically review key environmental issues for our business such as greenhouse gas emissions, air quality, water use and sensitive areas.

A tall, slender oil drilling rig stands against a vibrant sunset sky. The rig is illuminated with warm lights, and an American flag flies from the top. In the foreground, a red control cabin is visible, and the background shows rolling hills and trees under a colorful sky.

▶ In Colorado in the US we are deploying smaller rigs to reduce our environmental footprint while increasing production and access to resources.

# Oil spill preparedness and response

We are working to continuously improve how we control, contain and clean up oil spills should they occur.

Though our priority is to prevent oil spills, they can still happen. We take steps to improve our ability to respond to spills, including through simulation exercises, using technology to enhance our response capability and updating our oil spill response plans. Our performance over time suggests that our focus on response plans and spill exercises have helped improve our ability to respond to oil spill events.

## Oil spill response exercises

We regularly conduct oil spill exercises at locations around the world. For example, we worked with state and federal regulators in the Gulf of Mexico to assess the ability to treat or remove oil using dispersant, in-situ burning and mechanical means. We also tested the ability to maintain a cohesive response should the team command physically move from one facility to another during a response, which is often done to work more closely with federal, state and local government officials.

In Alaska nearly 400 participants, including federal and state government and industry representatives, took part in a two-day exercise hosted by BP. The exercise tested the time taken to bring equipment and vessels from outside the immediate area, as well as working in changing weather conditions, and the transition of roles and responsibilities during the response.

We also worked with government authorities, local administrators, fishing communities and our industry peers as part of a shoreline exercise in Angola. We were responsible for the practical deployment of some of our shoreline and on-water equipment and having a number of observers present. The exercise demonstrated that both BP and the sharing of regional response resources continue to improve.

## New and emerging technologies

We investigate and test the applicability of emerging technologies into our oil spill response capability. For example, in the Middle East, we have trialled the use of satellite imagery as a way to monitor for potential oil spills over large land areas and track clean-up response time.

## Common operating picture

We are working to incorporate a common operating picture – a single picture of all response related activity and resources at a given moment in time – into any BP oil spill response scenario. We use a tool that gathers multiple layers of geospatial data to create an integrated picture, which includes information on infrastructure, vessels, environment, incident features, weather and climate data, and predictive modelling. This helps us to better co-ordinate and manage our resources and improve real-time decision making for a more efficient and effective response.

## Incorporating learnings

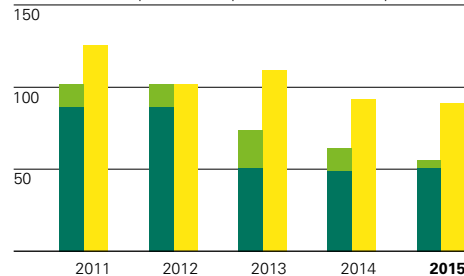
Our requirements for oil spill preparedness and response planning incorporate what we have learned over many years of operation.

We updated our oil spill response plan requirements in 2012 to incorporate learnings from the Deepwater Horizon accident. Revised response plans include elements such as specialized modelling techniques to help predict the impact of potential spills, provision of stockpiles of dispersant and use of technologies like aerial and underwater robotic vehicles for environmental monitoring. This is a substantial piece of work and our operating businesses with the potential to spill oil are on track to complete updates by the end of 2016.

## Number of oil spills

(≥ one barrel)

■ Contained oil spills ■ Oil spills to water ■ Oil spills to land



<b>To land and water</b>	102	102	74	63	<b>55</b>
<b>Contained</b>	126	102	111	93	<b>91</b>

## Find out more

[Read about actions we take to prevent accidents and spills on page 35.](#)

[See page 36 for how we are sharing lessons learned in our drilling operations.](#)

[See page 37 for more information on our approach to crisis management.](#)

## Gulf of Mexico: Environmental restoration

In October 2015 settlement agreements were filed with the federal court in New Orleans to resolve all US federal and state government claims arising from the Deepwater Horizon accident and spill. The \$18.7 billion settlement includes over \$7 billion to address claims for natural resource damages. This is the largest single element of the settlement and is in addition to the \$1 billion already committed for early restoration. The settlement is pending final court approval.

### Natural resource damage assessment

Scientists funded by BP, government agencies, academia and other organizations have studied a range of species and habitats to understand

how wildlife populations and the environment may have been affected by the 2010 Deepwater Horizon accident and oil spill. Some of the study data informed the draft assessment of injury to natural resources in the Gulf of Mexico that was prepared by federal and state trustees (NRD Trustees). BP had no role in developing the draft assessment or accompanying restoration plan.

In addition to the settlement agreement, BP has agreed to provide \$37 million to the federal government to develop a publicly available Gulf of Mexico environmental data management system.

### Early restoration projects

As at December 2015 BP and the NRD Trustees have agreed on 64 early restoration projects that are expected to cost approximately \$832 million; BP has funded \$762 million to date.

Work includes efforts to restore and enhance wildlife, habitats and the services provided by those habitats.

### Gulf of Mexico Research Initiative

In 2010 BP committed to pay \$500 million over 10 years to support independent research to improve society's ability to understand, respond to and mitigate the potential impacts of oil spills on marine and coastal ecosystems.


As at the end of 2015 the Gulf of Mexico Research Initiative had awarded approximately \$391 million in grants for research in areas including the ecological and human health aspects of spills, and the development of new technology for future spill response, mitigation and restoration. View the research projects at [research.gulfresearchinitiative.org](http://research.gulfresearchinitiative.org)

For more information see [bp.com/gulfcommitment](http://bp.com/gulfcommitment)

# Greenhouse gases and other air emissions

We manage our emissions through energy efficiency, reductions in flaring, methane management and the design of new projects.

Oil and natural gas companies generate greenhouse gases (GHGs) in almost every aspect of their work, from the finding, extracting and processing of hydrocarbon resources, to the transforming and delivery of these resources to customers. During these processes, the most significant GHG emissions, including carbon dioxide (CO<sub>2</sub>) and methane, come from the combustion of fossil fuels for energy, the flaring and venting of gas, and losses from equipment.

 [Read about our low-carbon efforts – gas, renewable energy, efficient operations and products, and research – on page 16.](#)

## Emissions management

We recognize the role GHGs play in climate change and aim to manage our GHG emissions through operational energy efficiency, reductions in flaring and venting, and by factoring a carbon cost into our investment appraisals and the engineering design of new projects. We also participate in global GHG reduction initiatives. We review our emissions and assess possible mitigation measures at a company-wide level, and provide guidance to our businesses to manage emissions in line with applicable local requirements.

We take a holistic approach to our GHG management by tracking and understanding our CO<sub>2</sub> and methane emissions. We recognize the short-term warming effects of methane, the long-term effects of CO<sub>2</sub>, and their combined role in climate change.

GHG regulation is increasing globally with a focus on reducing flaring and methane emissions in many jurisdictions. We expect that GHG regulation will continue to have an impact on our businesses, operating costs and strategic planning, but may also offer opportunities for the development of lower-carbon technologies and businesses.

A variety of factors – such as shifts in business activity, production or assets – can influence a company's GHG emissions. This makes it difficult to establish an appropriate GHG target that can be cascaded throughout the organization with the objective of achieving cost-effective emission reductions. For these reasons, BP, like some of our peers, does not set enterprise-wide GHG targets.

## Our performance

We report GHG emissions from all BP's consolidated entities as well as our share of equity-accounted entities other than BP's share of Rosneft.

Our direct GHG emissions were 48.9 million tonnes (Mte) in 2015 (2014 48.6Mte, 2013 50.3Mte). The increase in our reported emissions is due to updating the global warming potential for methane. Without this update, our emissions would have decreased primarily due to divestments in Alaska.

Each year since 2002 we have estimated the reduction in our reported annual GHG emissions due to efficiency projects – those not driven by regulatory requirements. These projects include reductions in flaring and venting, as well as energy efficiency projects, such as process optimization and waste-heat recovery. By the end of 2015 the running total of these real sustainable reductions exceeded 8.8Mte.

## Methane

Methane has a strong warming effect on the climate, but a relatively short lifetime in the atmosphere. We manage these emissions at a local level and take actions to control them, such as capturing gas that would otherwise be vented, and installing new equipment that uses compressed air rather than natural gas.

The Climate and Clean Air Coalition (CCAC) is committed to reducing short-lived climate pollutants. We joined the CCAC's Oil and Gas Methane Partnership in 2015, which aims to reduce methane emissions in the oil and gas sector. As part of this voluntary initiative, participating companies analyse sources of methane to evaluate cost-effective technologies for methane emissions reduction.

Through our participation in the Oil and Gas Climate Initiative we are working to improve the understanding and reliability of methane data. This will help to better prioritize mitigation measures.

## Flaring

Flaring is the controlled burning of natural gas found in oil and gas reservoirs, or the controlled burning of waste gas in production, refining and manufacturing operations. It is necessary in the initial commissioning of a well, during the start-up of operations, as a safety release or during maintenance.

BP is a founding member of the World Bank's Global Gas Flaring Reduction partnership, a public-private partnership that supports the development of infrastructure and regulatory mechanisms to help use gas that would otherwise be vented or flared during oil and gas operations.

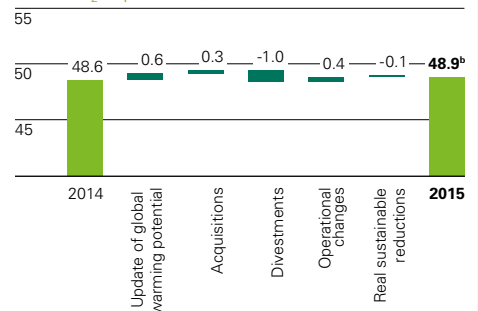
In 2015 BP joined the World Bank Zero Routine Flaring by 2030 initiative, which aims to eliminate routine flaring from oil assets by the year 2030. We are evaluating our existing operations to identify possible reduction opportunities. Our major new projects include design requirements that already meet the initiative objectives.

Our operations seek to minimize flaring, wherever practical. Some of our sites, for example in Alaska, re-inject gas into the reservoir to enhance production.

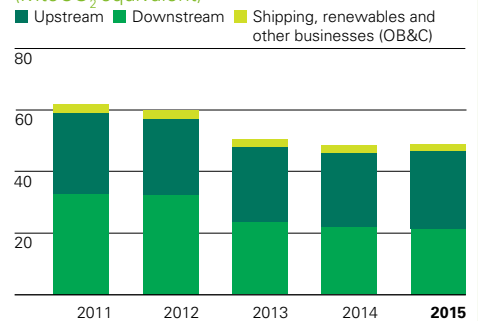
Working with regional partners in Azerbaijan, we made improvements to our offshore infrastructure

We look at our GHG performance in a variety of different ways. We review the year-on-year change in our total GHG emissions, our GHG emissions by business activity as well as our most significant climate change pollutants.

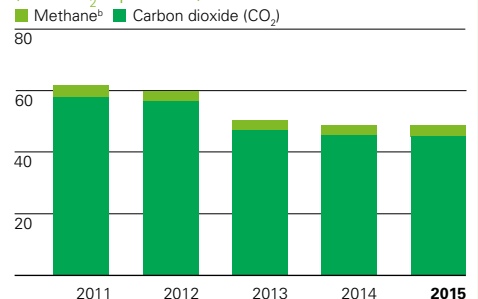
## Greenhouse gas emissions<sup>a</sup> (MteCO<sub>2</sub> equivalent)



## GHG emissions by activity<sup>b</sup> (MteCO<sub>2</sub> equivalent)



## GHG emissions by source (MteCO<sub>2</sub> equivalent)



<sup>a</sup> Because of rounding, some totals may not exactly agree with the sum of their counterparts.

<sup>b</sup> The 2015 figure reflects our update of the global warming potential for methane from 21 to 25, in line with IPIECA's guidelines.



“Methane emissions are important to understand, and even more important to control, in order to reduce their impact on climate change and to maximize the life cycle greenhouse gas advantages of natural gas. At BP, we’ve taken significant steps to understand the methane emissions from our upstream operations. For example, we have years of experience studying and improving the emissions performance of our onshore Lower 48 assets and have just completed detailed baseline surveys of our other operated facilities. These surveys will help to identify potential reduction opportunities.

Through our participation in the Climate and Clean Air Coalition methane initiative, we will be able to share our knowledge and experience in the onshore US, and benefit from the learnings of our peers. The initiative provides the opportunity for the industry, government and non-government organizations to work together to develop a common understanding of methane emissions and practical ways to minimize them.”

**Muhunthan Sathiamoorthy**  
GHG and energy efficiency expert,  
safety and operational risk, BP

to reduce flaring by either re-injecting associated gas back into the reservoir, or collecting and selling it. As a result of our efforts, the volume of gas flared has halved since 2010, and 265 thousand tonnes (kte) of CO<sub>2</sub> equivalent is avoided annually.

In Indonesia, we have been working on a long-term flare reduction programme. Since 2010 our Tangguh operations have reduced flaring by 87% by recycling gas for use as a fuel and continuous improvement in controlling sources.

We have seen a 15% decrease in flaring in our upstream operations since 2014, primarily due to improvements made to the gas injection

capacity of wells in our Angola operations, as well as a move from start-up activity to normal operations in several sites in Azerbaijan, Georgia and Turkey, and the North Sea.

### GHG intensity

For each of our major business activities, we track GHG intensity, which is the quantity of GHG emitted in tonnes per a defined unit of measurement.

The increased GHG intensity in our upstream operations over the past few years reflects our divestment of lower-intensity assets, increasing intensity in new areas that are more technically challenging, and late-life operations. Although there may be annual fluctuations, it is likely that the carbon intensity of our upstream operations will continue to increase for these reasons.

We expect the GHG intensity of our refining portfolio to remain relatively flat or to decrease at certain refineries due to efficiency projects in progress.

The decrease in GHG intensity of our petrochemicals portfolio reflects ongoing efficiency gains in our aromatics and acetyls businesses.

### Energy efficiency

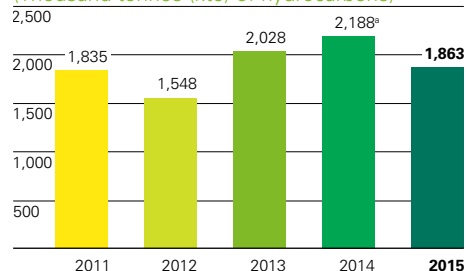
We look for ways to make our operations more energy efficient by reducing the amount of energy we need to produce our products. For example, our LNG operations in Tangguh are designed to be highly energy efficient through the use of combined cycle gas turbines and recycled waste-heat.

### Air quality

Some of our activities, such as burning fossil fuels for power generation and operating our shipping fleet, emit or contribute to pollutants of sulphur oxides, nitrogen oxides, and ozone. These pollutants may result in the formation of smoke, dust or smog, and can present a risk to human health. We seek to manage these emissions to meet accepted standards and guidelines designed to protect the environment and the health of local communities.

We are working with an air monitoring manufacturer and academia to pilot portable, real-time, air monitoring technology. The technology is designed to measure nitrogen oxides, sulphur oxides and ground level ozone in different climates and physical environments. This air quality data will provide a more comprehensive understanding of the impact of our emissions and will allow for more effective management.

### Flaring in our upstream operations (Thousand tonnes (kte) of hydrocarbons)



\*The reported 2014 figure of 2,167kte has been amended to 2,188kte.

### GHG intensity<sup>a</sup> (TeCO<sub>2</sub> equivalent/unit)

	2013	2014	2015
<b>Upstream</b> (per thousand barrels of oil equivalent)	30.1	31.9	<b>32.4</b>
<b>Refining</b> (per utilized equivalent distillation capacity)	995	978	<b>944</b>
<b>Petrochemicals</b> (per thousand tonnes)	283	291	<b>290</b>

<sup>a</sup>The 2015 figure reflects our update of the global warming potential for methane from 21 to 25, in line with IPIECA's guidelines.

#### Find out more



View our GHG emissions and intensity data based on operational control at [bp.com/annualreport](http://bp.com/annualreport)

Filter and analyse our air emissions data at [bp.com/hsechartingtool](http://bp.com/hsechartingtool)

# Water

BP recognizes the importance of managing fresh water use and water discharges in our operations.

BP uses fresh water in our drilling, hydraulic fracturing, upstream production, refining, petrochemicals and biofuels operations. At some of our refineries, we also use non-fresh water, such as seawater and treated municipal wastewater.

The exploration, production and refining of oil and gas accounts for about 1% of global freshwater withdrawals and much of the water withdrawn is returned to the local water basin. However, it is important to look at potential impacts – such as water scarcity, wastewater disposal and the long-term competition for water resources – at a local level.

## Assessing water risks

We review our water risks annually. We use the IPIECA Global Water Tool and the World Resources Institute Aqueduct Global Water Atlas to identify potential quantity, quality and regulatory risks across all our operated assets.

We use the Global Environment Management Initiative Local Water Tool to assess local water conditions and constraints and develop appropriate management actions. We have applied the tool at five existing operations and as part of impact assessments at five new projects.

We assess a project's life cycle water demand and how this may be met from available water resources in the area. For example, we analysed the water demands of our Khazzan project in Oman through the life of the operation and tested these using a detailed groundwater model. This allowed us to understand the wider context of water risks in the area and manage our impacts appropriately.

We collaborate with the University of Cambridge on research into the potential effects of water scarcity on patterns of energy supply and demand. As a result of the collaboration, the Foreseer visualization tool was developed, which demonstrates the link between water, land and energy, and how policy decisions about one resource may impact the others. The tool is available for use by a variety of stakeholders such as policymakers, research organizations and industry, and has so far been applied in California, Abu Dhabi and China.

We also assess different technology approaches for optimizing water consumption and wastewater treatment performance. For example, we have evaluated different approaches for reducing freshwater use in our purified terephthalic acid operations, such as wastewater recycling and seawater cooling.

We monitor the increasing number of regulations pertaining to freshwater withdrawals and water discharge quality where we operate. This has led to investments in our wastewater treatment plants at our refineries in Europe and the US.

## Water sources

BP withdraws fresh water from rivers, lakes, reservoirs and underground aquifers for our operations. We also purchase water from municipal drinking water suppliers. We use treated saline water in many areas, including in our unconventional gas operations in Oman. At some locations, such as our Kwinana refinery in Australia, we use specially treated water sourced from municipal wastewater treatment plants as our primary source of water for industrial use.

We have not identified any significant risks from our withdrawal and consumption of fresh water. Based on the IPIECA Global Water Tool, we estimate that around half of our major operations are located in areas where the availability of fresh water is considered stressed or scarce. However, these operations account for only 18% of our total freshwater withdrawal and are located in areas where water allocation and monitoring is well governed.

## Managing discharges to water

Our operations manage significant volumes of wastewater, created, for example, as a result of using water to test vessels or pipelines, or cooling water. We also manage produced water, which is brought to the surface during the production of hydrocarbons. These waters can be treated and then released back into the environment, re-injected back into the oil or gas reservoir or disposed of through other permitted means. In our biofuels operations in Brazil, the nutrient-rich wastewater from the ethanol refineries is reused as a source of irrigation water and fertilizer for the sugar cane crops.

Find out more



See [bp.com/hsechartingtool](http://bp.com/hsechartingtool) for more water management data.

## Clean water, clear future – a new wastewater treatment plant at BP's Rotterdam Refinery

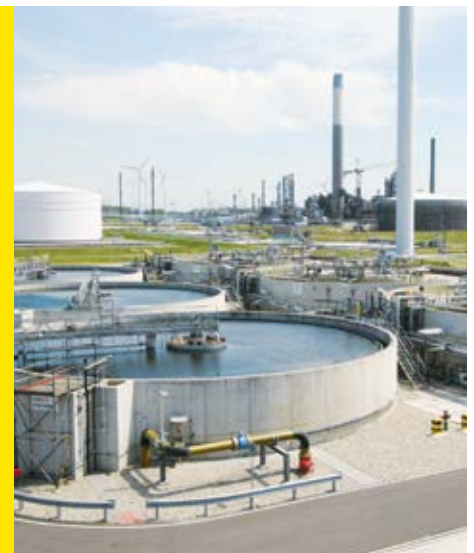
Our Rotterdam refinery in the Netherlands has a refining capacity of 377 thousand barrels of crude oil a day. It relies on an on-site facility to treat wastewater by removing contaminants prior to discharging clean water back into the environment. The refinery can treat and discharge up to 8,400m<sup>3</sup> of wastewater daily.

Built in 1980 the refinery's original wastewater treatment facility was dated and presented a series of challenges. Insufficient capacity at the facility was limiting the type of crude that the refinery could process, while also requiring it to send some wastewater offsite for treatment. We also believed that the plant may not meet

potential future regulatory standards. Finally, we were receiving complaints from local residents about odour associated with air emissions emitted during the treatment process.

To address these challenges, the Rotterdam refinery team embarked on a 10-year journey to design and construct a fit-for-purpose, wastewater treatment plant that initiated operations in January 2015.

The facility was designed to provide operational flexibility so that it can still run at full capacity, even if a component is shut down for maintenance. It can treat a greater variety of contaminants, which means the refinery can now process a more diverse array of crude oils, and wastewater is no longer sent off site for treatment. The new plant also encloses most odour sources resulting in no odour complaints in 2015. And it has significantly improved the quality of water discharged from the facility.



# Biodiversity and sensitive areas

We take steps to understand and manage the potential impacts of our operations on protected and sensitive areas.

BP operates in diverse environments around the world, from the desert to the deep sea. Some of these areas may be of cultural significance, important for protected or globally threatened species, or contain an ecosystem with outstanding biological, geographical or social value.

## Protected areas

Some of our operations are situated in or close to areas that have national and international protected area status. We report on our major operations in and around protected areas, including those designated as protected by the International Union for Conservation of Nature (IUCN) (categories I-IV, V-VI and unassigned), UNESCO World Heritage sites and sites designated under the Ramsar Convention.

We review the location of our operations in relation to protected areas annually. Five of our major operations have activities within the boundary of a protected area. This number may fluctuate annually as protected area designations are reviewed. BP shipping, a major operation, also enters protected areas as part of normal operations.

## Managing impacts

Where our screening process indicates that a proposed project's planned activities could affect, or may enter an international protected area, we require executive approval before any physical activities take place. We then proceed with a detailed impact assessment and identify ways to first avoid, or secondly minimize, any potential impacts. No new BP project sought permission for entry into an international protected area in 2015.

## Understanding ecological diversity in Brazil

We supported research conducted by the University of Oxford and Brasilia University to characterize the plant diversity in the Cerrado, a sensitive savannah habitat surrounding our biofuels operations. The research identified more than 2,800 plant specimens and 900 species. This will help inform BP's local

environmental management efforts, including reforestation and other programmes to maintain and restore local biodiversity.

## Marine environments

BP has a strong deepwater portfolio and we work to understand how our operations may affect marine ecosystems. For example, we are working on a multi-year study of the biological and socio-economic importance of the Great Australian Bight with our research partners in Australia. More than 360 species samples were collected in 2015 and results are being analysed. Findings will help inform management in the area and are available at [misa.net.au/GAB](http://misa.net.au/GAB)

We also aim to minimize potential impacts from sound to the marine environment. For example, when making modifications to our offshore infrastructure in the North Sea, we monitored for marine mammals so that activities only began when none were present. We gradually increased sound energy so as not to expose marine mammals that may enter the area to any sudden or loud sounds during the start-up of activities.

We take steps to explore the characteristics of ambient sound in environments where we work to determine how our activities may contribute to the underwater soundscape. In Angola, we have monitoring stations that gather ocean data, including sound. This helps us to understand long-term patterns in the deepwater environment, including sound associated with our activities.

BP also participates in the International Association of Oil and Gas Producers' sound and marine life joint industry programme. The programme supports scientific research to increase the understanding of how sound generated by the oil and gas industry may impact marine life. We incorporate the knowledge and tools generated by the programme to minimize impacts from our operations. For example, in some locations we use PAMGuard, a software tool that helps detect sounds from marine mammals during our seismic operations.



▲ The monitoring stations around our vessels in Angola are designed to be in place for 25 years.



species identified in the Brazilian Cerrado.

## Major operations within and around a protected area in 2015\*

Type of protected area	Inside the boundary	Adjacent (within 1km)	Near (1-5km)	Close (5-20km)
World Heritage Site	2	0	2	1
Ramsar site	1	2	2	4
IUCN category I-IV	5	5	10	15
IUCN category V-VI	2	3	7	10
IUCN not reported (unassigned)	1	1	3	2
<b>Total major operations</b>	<b>5</b>	<b>7</b>	<b>13</b>	<b>18</b>

\* A major operation may exist within or near more than one type of protected area.

Find out more



See [bp.com/sensitiveareas](http://bp.com/sensitiveareas) for a full list of our operations near protected areas.

# Society

Our operations can bring about major changes to societies and communities, impacting people's health, wellbeing, culture and livelihoods. To BP, working responsibly includes seeking to have positive impacts on the communities in which we operate.



▶ In the US we are helping the next generation of energy workers acquire the skills they need through training at San Juan College in New Mexico.




# Working with communities

We consult with communities throughout the life cycle of projects and operations and develop plans to manage any related impacts.

Oil and gas projects and operations have the potential to affect communities in a positive way by creating jobs, generating tax revenues, providing opportunities for local suppliers and supporting community development initiatives.

Negative impacts may occur if a company does not appropriately consider the concerns of nearby communities. For example, as part of our Tangguh expansion project in Indonesia, we created an alternative route to a cultural heritage site after engaging with local villagers and learning that access to the site would have been blocked by our activities.

We screen for possible socio-economic impacts during project planning and conduct impact assessments to help us avoid or mitigate negative impacts.

 See page 25 for more information on how we manage impacts.

## Community engagement

Our ability to operate safely and continuously depends not only on the necessary official permits from authorities, but also informal permission and support from the communities in the surrounding area. We aim to build enduring, mutually beneficial relationships with communities and strive for continuous open dialogue so that we may work together to address potential positive and negative socio-economic impacts.

In Georgia, where we operate more than 800 kilometres of pipeline, we hold regular meetings with local communities to provide updates on our activities, communicate safety awareness and receive general feedback on our project, including concerns and requests. We held more than 500 community consultations in Georgia in 2015. In one session, for example, a community requested improvements to village access to major roads as part of a broader project to upgrade road infrastructure. We worked with our contractor and were able to address the community's request.

In Australia, we consulted with more than 60 stakeholder groups, such as non-governmental organizations (NGOs), governments, local and indigenous communities and other industries, to share information on our planned drilling programme in the Great Australian Bight. The consultation process provided an opportunity for members of the community to raise their concerns, ask questions and express their interest in potential economic opportunities.

Stakeholders could also provide input on our environmental plan, which includes our planned activity, potential impacts to the environment, and proposed mitigation measures.

 Read more about our exploration drilling programme at [bpgabproject.com.au](http://bpgabproject.com.au)

## Community grievances

We believe that listening and responding to concerns raised by the communities in which we operate enables all sides to constructively resolve potential disagreements and avoid disruption to our activities. We require our businesses to respond to community and stakeholder concerns and to record and act on any commitments. For example, at our South Caucasus pipeline expansion project in Azerbaijan and Georgia, we aim to register and acknowledge community grievances within seven days, and address them within 30 days.

Our grievance mechanisms can lead to improvements in the way we do business and work with local communities. For example, when leasing land for a project, we have a formal process for compensating registered landowners. When we received a complaint in Georgia from a group of farmers who were concerned that our activities could potentially impact their livelihood, we recognized the need to develop a way to compensate all bona fide users on project land, regardless of whether they held registered rights. By changing our approach, we have compensated more than 370 community members through three BP-established community-based organizations.

In 2015 concerns and requests raised by communities living near our major operating sites included noise, odour, dust, job opportunities for local residents, community investment programmes, flaring and access to roads.

We worked with our peers through the oil and gas industry association IPIECA to develop and promote guidance that integrates human rights into community grievance management. In line with our human rights policy commitments, in 2015 we reviewed our approach to managing community complaints. We began evaluating community grievance mechanisms at key sites using the United Nations Guiding Principles on Business and Human Rights to identify areas for improvement.



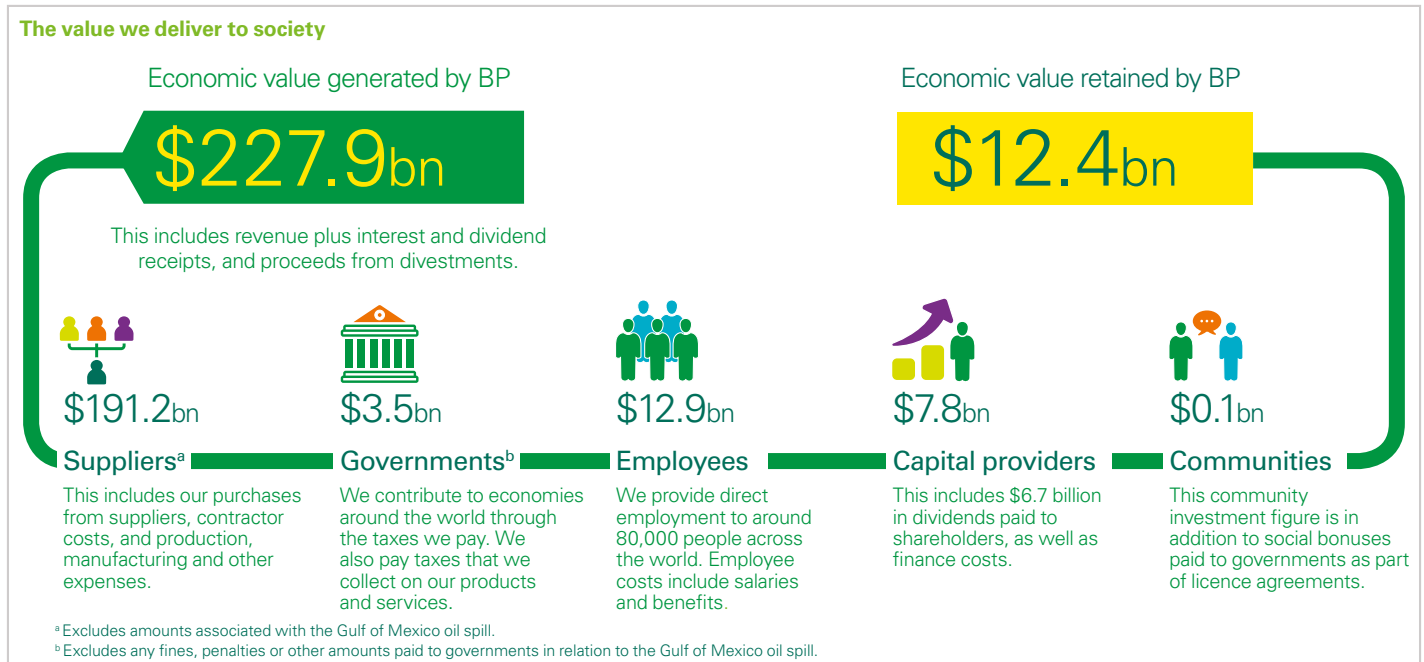
▲ Community liaison officers from our South Caucasus Pipeline Expansion project play an important role by engaging with the community.



community consultations around our pipelines in Georgia.

# Supporting development in societies where we work

We believe that societies and communities where we work should benefit from our presence.



We contribute to economies through our core business activities, for example by helping to develop the national and local supply base, and through the taxes we pay to governments. Additionally, our social investments aim to support communities' efforts to increase their incomes and improve standards of living.

That said, we recognize that the impact of falling oil prices will be felt not only by our industry but also by our host countries, particularly in areas where government revenues are heavily dependent on oil and gas.

We develop strategies for our socio-economic contribution within a country that respond to local needs and work to meet the expectations of regulatory authorities. We are taking a more systematic and consistent approach to how these are developed, focusing on three key areas – contracting with local suppliers, local workforce development, and social investment. We developed a strategy for Oman in 2015 that includes, for example, a process for using local suppliers.

## Local workforce

We seek to recruit our workforce from the local community or country. We do this to meet host governments' requirements and because we believe it benefits the local community and BP.

A number of our major operating sites are working to improve local and national representation in their workforce. In Oman, for example, BP is working to build local skills

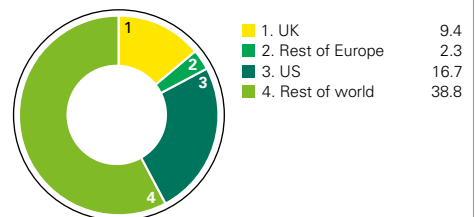
through a technician development programme. Around 90 Omani technicians are currently enrolled in the programme, which includes health, safety and environmental technical skills training at a dedicated training centre in Muscat. The programme also includes on-the-job training at other operators' oil and gas sites in Oman, as well as BP sites in the UK and US.

In Egypt, we sponsor two scholarship programmes aimed at providing Egyptian youth with opportunities to continue their education. We awarded five students scholarships to Cambridge University in the UK in 2015. Students are pursuing masters degrees in areas such as industrial systems manufacturing and management, and engineering and sustainable development. We also offered a scholarship in building energy and environmental performance modelling to a student to pursue a Master's degree at an international university of their choice.

## Local suppliers

We promote the use of local suppliers where appropriate, contributing to the growth of the local skilled workforce. For example, we support the platform construction industry in Trinidad & Tobago, taking delivery of our sixth locally produced platform for our Juniper offshore gas project in 2016. The local supplier – originally formed to construct a BP platform more than a decade ago – is the only company producing platforms locally.

## Contribution to communities by region (\$ million)



As part of our exploration drilling programme in Australia, we participate in a government-supported network that helps local suppliers to register their interest in working with us. We have included requirements in our contracts that further promote the use of local suppliers.

In the UK we support an apprenticeship programme run by one of our contractors in the North Sea. The programme provides training on the skills required for the safe and reliable operation of our offshore assets.

## Community investment

We support development programmes that meet local needs and are relevant to our business activities. We use information from community engagement and impact assessments to shape our approach and work with local partners to deliver programmes that aim to create meaningful and sustainable impacts.



◀ We are Trinidad & Tobago's largest hydrocarbon producer, accounting for about 60% of the nation's oil and gas production. We are taking delivery of our sixth locally produced platform for our Juniper offshore gas project in 2016.

We contribute to the development of training and employment opportunities, and help to build capability in institutions and businesses. For example, in Georgia, we have supported the development of almost 600 small businesses and entrepreneurs since 2003, ranging from beekeeping, to baking, to a variety of retail businesses. In addition to providing initial start-up grants, BP provides training to equip entrepreneurs with the skills and knowledge necessary for managing their business. At a local conference in 2015, 40 of the businesses came together to share their achievements and challenges, as well as to meet with potential customers and business partners.

We often contribute to education initiatives in regions where we work. In Angola, for example, we helped construct 10 schools in rural areas in order to make education more accessible to local communities. Since completion, the initiative now provides access to education for almost 9,500 children and about 250 jobs for local teachers.

#### Direct spending on community programmes

Our direct spending on community programmes in 2015, including disaster relief, was \$67.2 million. This excludes spending on costs associated with the Deepwater Horizon accident and is in addition to \$12.9 billion for employee benefits and wages and \$3.5 billion in taxes paid to governments.

#### The BP Foundation

The BP Foundation is a charitable organization working to benefit communities around the world by prioritizing donations to charities that support science, technology, engineering and maths education and humanitarian relief. In 2015 the foundation contributed \$370 thousand to organizations and schools around the world that aligned with these focus areas and \$310 thousand to locally based relief organizations.

The foundation also matches the personal contributions that BP employees make to eligible charities of their choice. In 2015 employees gave around \$6.9 million, which was matched with grants of approximately \$9.6 million.

#### Tax and financial transparency

We support transparency in revenue flows from oil and gas activities in resource-rich countries. This helps citizens of those countries access information to hold public authorities to account for the way they use funds received through taxes and other agreements.

#### Our approach to tax

BP is committed to complying with tax laws in a responsible manner and having open and constructive relationships with tax authorities. We support efforts to increase public trust in tax systems. We engage in initiatives to simplify and improve tax regimes to encourage investment and economic growth.

 [View our approach to tax at bp.com/tax](http://bp.com/tax)

#### European Accounting and Transparency Directives and US Dodd-Frank legislation

We will start to disclose information on payments to governments on a country-by-country and project basis in 2016. The disclosure is required under the revenue transparency provisions contained in the EU Accounting Directive, which was recently brought into effect in UK law. We are awaiting the finalization and adoption of the SEC rules under the US Dodd-Frank Act.

#### Extractive Industries Transparency Initiative

As a founding member of the Extractive Industries Transparency Initiative (EITI) and a member of the initiative's board, BP works with governments, non-governmental organizations and international agencies to improve transparency and disclosure of payments to governments.

We support governments' efforts towards EITI certification in countries where we operate and have worked with many countries on implementation of their EITI commitments, including Australia, Azerbaijan, Indonesia, Iraq, Norway, Trinidad & Tobago, the UK and the US.

We believe that the comprehensive, multi-stakeholder approach of EITI is the best approach for the extractive industries. The EITI is an inclusive process that is tailored to fit the local fiscal and legal regimes. See [eiti.org](http://eiti.org) for more information on our EITI activities.

# Human rights

We are committed to conducting our business in a manner that respects the rights and dignity of all people.

We respect internationally recognized human rights as set out in the International Bill of Human Rights and the International Labour Organization's Declaration on Fundamental Principles and Rights at Work. We set out our commitments in our human rights policy. Our code of conduct references the policy, requiring employees to report any human rights abuse in our operations or in those of our business partners. And, our operating management system includes guidance on human rights-related topics for our projects.

## Potential impact areas

When planning for projects, we consider human rights issues such as security, labour rights and workforce welfare, community health and safety, water use, air quality and potential impacts on the livelihoods of local communities. This helps us to manage activities that could impact the rights of nearby communities and our workforces.

## Implementing the UN Guiding Principles

We are delivering our human rights policy by implementing the relevant sections of the United Nations Guiding Principles on Business and Human Rights and incorporating them into the processes and policies that govern our business activities.

We are progressing towards alignment with the UN Guiding Principles using a risk-based approach. This includes working across functions and businesses to continuously improve in areas such as identifying and addressing human rights risks and impacts, community and workforce grievance mechanisms, and contracted workforce working and living conditions and recruitment processes.

We worked with industry association IPIECA in 2015 on implementing the UN Guiding Principles in our business relationships, particularly with major contractors. We also began to incorporate IPIECA's community complaints management guidance into our business processes.

 [Read about how we manage community grievances on page 47.](#)

## Increasing awareness

We are working to build employee awareness of both our human rights policy and the potential human rights impacts within our industry. We developed web-based training in 2015, including online guidance and tools, and delivered a new course to help employees train their own teams and functions. We also provide training on specific human rights

topics, including integrating human rights into impact assessments. In 2015 we held 31 human rights training events for more than 500 employees.

## Supply chain

We work with thousands of different companies across our supply chain, and how we work with suppliers may impact human rights issues such as labour rights and workforce welfare.

Our human rights policy makes a number of commitments that relate to the supply chain. For example, we seek to make contractual commitments with suppliers that encourage them to adhere to the principles contained in our policy. The standard model contracts used by our upstream, downstream, shipping and biofuels businesses now include requirements for our suppliers to respect internationally recognized human rights in their work for BP. We have developed similar human rights clauses for other parts of BP, such as information technology, human resources, facilities management and travel. We include these requirements as we renew or enter into new contracts.

We integrated human rights issues into our shipping supplier forums for the first time in 2015. More than 65 suppliers attended the forums, where we discussed issues such as the responsibility to respect human rights in business, the importance of human rights for the shipping industry and how BP incorporates human rights into our code of conduct.

In addition to regular supplier audits, our biofuels business in Brazil uses a tool to help mitigate potential human trafficking and forced labour issues. The business can now access contractor employee documentation to verify that contractors are respecting the rights of their employees and complying with applicable labour laws. The tool also supplements regular audits by providing access to contractor policies governing human rights issues.

Based on work with our industry peers, our downstream business is piloting a new approach for assessing companies against human rights criteria that aims for greater interaction and transparency between auditors, suppliers and their workforce.

## Security and human rights

Security management can be complex, especially in locations where there is a higher potential for conflict or violent crime. A company's security arrangements, if not managed carefully, may expose it to accusations of complicity in human rights



## Q&A

### Can you talk us through steps you are taking to implement BP's human rights policy?

To help us more efficiently identify, address and report on human rights risks in the supply chain, we are working across our procurement teams to standardize and enhance a set of tools that can be used by all of our businesses.

A particular achievement in 2015 is that we now have human rights clauses in the contract templates used by our main procurement groups. We're working with our suppliers to embed this in new or revised contracts. Additionally, drawing on our work with industry peers, we developed a standard set of questions that can be used to help screen potential and current suppliers in a consistent way anywhere around the world. We're also reviewing new and emerging legislation and requirements, such as the 2015 UK Modern Slavery Act.

We have a broad global supply base and simplifying how we work will help us to improve our management of human rights risks in the supply chain. I feel the progress we've made this year will provide a strong foundation to build on over the next few years.

### Jill Douglas

Global sustainability specialist, upstream procurement and supply chain management, BP

abuses. We seek to engage with the security forces that protect our assets to help them understand the human rights of our workforce and communities living near our operations and to interact responsibly with them.

### Voluntary Principles on Security and Human Rights

We are a signatory to the Voluntary Principles on Security and Human Rights, which provide a framework for companies to assess whether human rights issues are likely to arise as a result of security activities within local operations, and to allow appropriate precautionary steps to be taken. Since 2014 BP has held a position on the corporate pillar steering committee, which provides oversight and direction for initiatives based on the Principles.

We work with governments, other companies and non-governmental organizations (NGOs) whether or not they participate in the Voluntary Principles, to share and promote best practice. For example, we are working with an NGO in the Netherlands to develop best practices in developing memorandums of understanding with governments. This work will help clarify what government and company members within

the Voluntary Principles initiative should include in shared security agreements. Shared agreements may address aspects such as areas of responsibility, equipment usage and investigation of incidents.

We have been working with NGO International Alert to update their guidance on operating in environments where security may be challenging.

### Implementing the Voluntary Principles

We provide those employees accountable for assessing and managing security risks with guidance explaining BP's approach to implementing the Voluntary Principles, including the mechanisms we use for identifying and mitigating risk, interaction with public security forces, engagement with private security providers and evaluating progress. We periodically conduct internal assessments to identify areas where we can improve implementation.

BP reports on its progress in relation to security and human rights issues in an annual report to the Voluntary Principles plenary.

### Key impacts

Potential human rights impact areas relevant to our industry



## Working with indigenous peoples in Indonesia

BP's Tangguh LNG operation in Indonesia currently produces 7.6 million tonnes per annum, with an expected 50% increase in production through our expansion project.

BP has been working with Tangguh's local communities for more than a decade. With the advent of the expansion project, we needed to understand how any new activity could impact local communities, with a particular focus on the indigenous Papuan community.

We spent two years consulting with local communities and analysing potential impacts in order to develop and implement social programmes. The Tangguh Independent Advisory Panel (TIAP) – which advises BP on the non-commercial aspects of our operations – said our engagement process “provided by far the best opportunity to date for input from and dialogue among, local affected parties”.

We initiated a programme in 2015 to build sustainable businesses run by members of the Papuan community, supporting the foundation of two businesses: one that manufactures uniforms for our Tangguh facility and others, and another that will provide air conditioning maintenance to service the growing local industry. BP provided community members with technical training and



hands-on experience through apprenticeship programmes.

We are also working to build the local indigenous workforce and have committed to an 85% Papuan workforce by 2029. In order to achieve this goal, we developed an internship programme to recruit university graduates from Papua and Papua Barat for BP's Tangguh LNG site. This gives graduates from a variety of disciplines – such as electrical and mechanical engineering, geology and economics – hands-on experience to prepare them for future careers at BP or one of our business partners. We have recruited more than 55 graduates since the internship programme began in 2009. Currently 55% of our workforce are Indonesian nationals from the Papuan province.

We regularly engage with community-based and international NGOs through TIAP to update and receive feedback on our social programmes.



65+

shipping suppliers attended forums that discussed human rights.

### Find out more

Read our human rights policy at [bp.com/humanrightspolicy](http://bp.com/humanrightspolicy)

View our annual report on the Voluntary Principles on Security and Human Rights at [bp.com/humanrights](http://bp.com/humanrights)

See [bp.com/indonesia](http://bp.com/indonesia) for the 2015 TIAP report and BP's response.

# Independent assurance statement

We have performed a limited assurance engagement on selected performance data and statements presented in the BP p.l.c. (BP) Sustainability Report 2015 (the Report).

## Respective responsibilities

BP management are responsible for the collection and presentation of the information within the Report. BP management are also responsible for the design, implementation and maintenance of internal controls relevant to the preparation of the Report, so that it is free from material misstatement, whether due to fraud or error.

Our responsibility, in accordance with BP management's instructions, is to carry out a 'limited level' assurance engagement on selected data and performance claims in the Report (the subject matter information). We do not accept or assume any responsibility for any other purpose or to any other person or organisation. 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 ISAE3000 (Revised)<sup>1</sup>.

The Report has been evaluated against the following criteria:

- Whether the Report covers the key sustainability issues relevant to BP in 2015 which were raised in the media, BP's own review of material sustainability issues, and selected internal documentation.
- Whether the health, safety and environment (HSE) data presented in the Report are consistent with BP's Environmental Performance Group Reporting Requirements and HSE Reporting Definitions.
- Whether sustainability claims made in the Report are consistent with the explanation and evidence provided by relevant BP managers.

## Summary of work performed

The procedures we performed were based on our professional judgement and included the steps outlined below:

1. **Interviewed a selection of BP's senior managers** to understand the current status of safety, social, ethical and environmental activities, and progress made during the reporting period.
2. **Reviewed selected group level documents** relating to safety, social, ethical and environmental aspects of BP's performance to understand progress made across the organisation and test the coverage of topics within the Report.
3. **Carried out the following activities to review health, safety and environment (HSE) data samples and processes:**
  - a. Reviewed disaggregated HSE data reported by a sample of 19 businesses to assess whether the data had been collected, consolidated and reported accurately.
  - b. Reviewed and challenged supporting evidence from the sample of businesses.
  - c. Tested whether HSE data had been collected, consolidated and reported appropriately at group level.

4. **Reviewed the coverage of material issues within the Report** against the key sustainability issues raised in external media reports and the outputs from BP's processes for determining material sustainability issues.
5. **Reviewed information or explanations about selected data, statements and assertions** within the Report regarding BP's sustainability performance.

## The limitations of our review

Our evidence gathering procedures were designed to obtain a 'limited level' of assurance (as set out in ISAE3000 Revised) 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 work did not include physical inspections of any of BP's operating assets.

Completion of our testing activities has involved placing reliance on BP's controls for managing and reporting HSE information, with the degree of reliance informed by the results of our review of the effectiveness of these controls. We have not sought to review systems and controls at BP beyond those used for HSE data.

## Our conclusions

Based on the scope of our review our conclusions are outlined below:

### Materiality

**Has BP provided a balanced representation of material issues concerning BP's sustainability performance?**

- We are not aware of any material aspects concerning BP's sustainability performance which have been excluded from the Report.
- Nothing has come to our attention that causes us to believe that BP management has not applied its processes for determining material issues to be included in the Report.

### Completeness and accuracy of performance information

**How complete and accurate is the HSE data in the Report?**

- With the exception of the limitations identified in the Report on pages 8-9, we are not aware of any material reporting units that have been excluded from the group-wide HSE data.
- Nothing has come to our attention that causes us to believe that the data relating to the above topics has not been collated properly from group-wide systems.
- We are not aware of any errors that would materially affect the data as presented in the Report.

**How plausible are the statements and claims within the Report?**

- We have reviewed information or explanation on selected statements on BP's sustainability activities presented in the Report and we are not aware of any misstatements in the assertions made.

## Observations and areas for improvement

Our observations and areas for improvement will be raised in a report to BP management. Selected observations are provided below. These observations do not affect our conclusions on the Report set out above.

- BP continues to provide an overview of its activities to manage sustainability impacts across unconventional resource types, e.g. deepwater, hydraulic fracturing and oil sands. There is also an acknowledgement that the commercial viability of oil sands projects remains under evaluation, given the changing global oil prices. In response to increasing stakeholder interest, there is the opportunity for BP's future reporting to link more clearly between reporting on these activities and the availability and commercial viability of different resource types (as referenced within the section on resilience).
- BP provides background context for the section covering employees, by describing how lower global oil prices have led to reductions in headcount. There is also acknowledgement that the more challenging market conditions have resulted in lower graduate recruitment levels. This approach has helped BP to provide balance within the subsequent discussion of its recruitment, training and employee engagement activities.
- The Report includes brief coverage of the approach taken to reward employees for their performance in relation to safety, compliance and risk management. As part of this, BP notes that there are specific safety performance measures related to executive remuneration. The shareholder resolution on climate change resilience requested additional information on BP's approach to executive incentives in the context of a transition to a lower-carbon economy. As this evolves, it is likely that stakeholders will expect to see commentary on this topic.

## Our independence

We have implemented measures to comply with the applicable independence and professional competence rules as articulated by the IFAC Code of Ethics for Professional Accountants and ISQC1<sup>2</sup>. 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 2015. Our assurance team has been drawn from our global Climate Change and Sustainability Services Practice, which undertakes engagements similar to this with a number of significant UK and international businesses.

**Ernst & Young LLP, London**  
16 March 2016

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

<sup>2</sup> Parts A and B of the IESBA Code; and the International Standard on Quality Control 1 (ISQC1).

## Cautionary statement

*BP Sustainability Report 2015* and *bp.com/sustainability* contain certain forward-looking statements with respect to the financial condition, results of operations and businesses of BP and certain of the plans and objectives of BP with respect to these items. In particular, among other statements, BP's outlook on global energy trends to 2035 and its plans in connection therewith, plans to reduce our workforce, expectations regarding BP's advanced and proprietary technologies and techniques, expectations regarding the emissions, water use and commercial viability of BP's oil sands projects, expectations regarding the commercialization and sustainable production of biofuels, the timing and composition of planned and future projects, plans regarding opportunities in the Arctic and expectations regarding future regulatory developments, are forward looking in nature.

By their nature, forward-looking statements involve risk and uncertainty because they relate to events and depend on circumstances that will or may occur in the future and are outside the control of BP. Actual results may differ materially from those expressed in such statements, depending on a variety of factors,

including the specific factors identified in the discussions accompanying such forward-looking statements; the receipt of relevant approvals; the timing and level of maintenance and/or turnaround activity; the timing of bringing new fields onstream; the timing, quantum and nature of certain divestments; future levels of industry product supply, demand and pricing; OPEC quota restrictions; PSA effects; operational problems; economic and financial market conditions generally or in various countries and regions; political stability and economic growth in relevant areas of the world; changes in laws and governmental regulations; regulatory or legal actions; the impact on our reputation following the Gulf of Mexico oil spill; development and use of new technology; the success or otherwise of partnering; the actions of competitors, trading partners, creditors, rating agencies and others; the actions of contractors; natural disasters and adverse weather conditions; changes in public expectations and other changes to business conditions; wars and acts of terrorism, cyber-attacks or sabotage; and other factors discussed elsewhere in this document and under 'Risk factors' in our *Annual Report and Form 20-F 2015* as filed with the US Securities and Exchange Commission.

Material is used within this document to describe issues for voluntary sustainability reporting that are considered to have the potential to significantly affect sustainability performance 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. *BP Annual Report and Form 20-F 2015* and *BP Strategic Report 2015* may be downloaded from *bp.com/annualreport*. No material in this Sustainability Report forms any part of those documents. No part of this Sustainability Report or *bp.com/sustainability* constitutes, or shall be taken to constitute, an invitation or inducement to invest in BP p.l.c. or any other entity and must not be relied upon in any way in connection with any investment decisions. BP p.l.c. is the parent company of the BP group of companies. Unless otherwise stated, the text does not distinguish between the activities and operations of the parent company and those of its subsidiaries.



BP's corporate reporting suite includes information about our financial and operating performance, sustainability performance and also on global energy trends and projections.



#### Annual Report and Form 20-F 2015

Details of our financial and operating performance in print and online. Published in March.  
[bp.com/annualreport](http://bp.com/annualreport)



#### Strategic Report 2015

A summary of our financial and operating performance in print and online. Published in March.  
[bp.com/annualreport](http://bp.com/annualreport)



#### BP Energy Outlook 2016 edition

Projections for world energy markets, considering the global economy, population, policy and technology. Published in February.  
[bp.com/energyoutlook](http://bp.com/energyoutlook)



#### Sustainability Report 2015

Details of our sustainability performance with additional information online. Published in March.  
[bp.com/sustainability](http://bp.com/sustainability)



#### Financial and Operating Information 2010-2015

Five-year financial and operating data in PDF and Excel format. Published in April.  
[bp.com/financialandoperating](http://bp.com/financialandoperating)



#### Statistical Review of World Energy 2016

An objective review of key global energy trends. Published in June.  
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