How will BP respond to global change?

BP Sustainability Report 2017
We want to build enduring relationships with governments, customers, partners, suppliers and communities in the countries where we work.

Engaging with each of you is essential to operating our business responsibly. In this report we respond to your top questions.

<table>
<thead>
<tr>
<th>The energy transition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>How is the energy transition changing BP?</td>
<td>1</td>
</tr>
<tr>
<td>How are you making your operations fit for a low carbon future?</td>
<td>12</td>
</tr>
<tr>
<td>What are your plans for growing your renewable and low carbon businesses?</td>
<td>17</td>
</tr>
<tr>
<td>How will electric vehicles affect demand for your products?</td>
<td>24</td>
</tr>
<tr>
<td>Which policies do you think are necessary to make a 2°C world a reality?</td>
<td>28</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Safety</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>How does BP maintain safety in a competitive environment?</td>
<td>31</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Human rights</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Has your human rights policy changed the way you do business?</td>
<td>37</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Value to society</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>How do you measure the value that you bring to communities and countries?</td>
<td>45</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Managing impacts</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>How do you take into account sustainability factors when you enter new regions?</td>
<td>53</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>What are your top environmental issues at a local level?</td>
<td>58</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Our people and ethics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>What is BP doing to advance diversity in the workplace?</td>
<td>66</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Governance and risk</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>What role does your board play in leading BP towards a sustainable future?</td>
<td>72</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stakeholders, materiality and data</th>
<th></th>
</tr>
</thead>
</table>
Q / How is the energy transition changing BP?

A / What you see in our strategy and the new targets we have set is a business that is focused – in everything we do – on meeting the dual challenge of more energy with fewer emissions. And, when we all work together towards a common goal, there’s nothing we can’t achieve.

Bob Dudley
Group chief executive, BP
The transition to a low carbon economy is one of the great challenges of our time.

The 2015 Paris Agreement set expectations around the world for the transition to a low carbon future. BP understands the urgency and supports the aim of the agreement. And, we are dedicated to being part of the solution.

No one company or sector alone can deliver a low carbon future. Everyone, from consumers to corporations to governments, needs to take responsibility.

We believe that, to meet global climate goals, the world should prioritize:

→ **Reducing emissions rather than promoting any one fuel as the answer.** The world will need all forms of energy for a long time to come, so we need to make all fuels cleaner.

→ **Improving energy efficiency, where the greatest reductions in emissions can be achieved.** Advances in technology for everyone – from industry to individuals – are creating huge opportunities to achieve gains over the coming years.

→ **Carbon pricing as one of the most significant steps that can be made.** The more governments can do to bring about clear, stable pricing frameworks, the greater the incentives for innovation and lower carbon choices.

If we respond collectively, even a challenge as complex as climate change can be met.

Oil and gas are going to be a substantive part of a future rich in energy for the world’s growing population; we, at OGCI Climate Investments, are working to make it a low emissions one.

**Pratima Rangarajan**
Chief executive officer, OGCI Climate Investments
The demand for energy continues to grow – largely driven by rising incomes in emerging economies and a global population heading towards nine billion by 2040.

At the same time, the energy mix is changing as technology advances, consumer preferences shift and policy measures evolve. Renewables are now the fastest-growing energy source in history and we estimate that they could account for 14% of all energy consumption in 2040 – if not more. That said, oil and gas could meet at least 40% of the world’s energy needs in 2040 – even on a course that’s consistent with the Paris goal of limiting global warming to less than 2°C.

Gas offers a much cleaner alternative to coal for power generation and can lower emissions at scale. It also provides a valuable back-up for renewables intermittency, delivers heating at the high temperatures required by industry and is increasingly used in transportation.

Oil is the primary fuel for transport today. We expect its share of the total energy mix will gradually decline as we see more energy efficiency in traditional engines, greater use of biofuels and natural gas, and growth in fully electric and hybrid vehicles in the years ahead.

With oil and gas in high demand for years to come, it’s essential that action is taken to reduce emissions from their production and use.

**Energy consumption – 2040 projections**

- **Actual energy mix 2016**
  - Oil: 23%
  - Gas: 20%
  - Coal: 28%
  - Nuclear: 4%
  - Hydro: 4%
  - Renewables: 7%

- **Evolving transition 2040**
  - Oil: 27%
  - Gas: 26%
  - Coal: 21%
  - Nuclear: 5%
  - Hydro: 7%
  - Renewables: 14%

- **Faster transition 2040**
  - Oil: 25%
  - Gas: 22%
  - Coal: 13%
  - Nuclear: 7%
  - Hydro: 8%
  - Renewables: 8%

- **Even faster transition 2040**
  - Oil: 22%
  - Gas: 19%
  - Coal: 10%
  - Nuclear: 8%
  - Hydro: 8%
  - Renewables: 33%

Billion tonnes of oil equivalent. The sum of the fuel shares may not equal 100% due to rounding.

**Evolving transition**

In this scenario, government policies, technology and social preferences evolve in a manner and speed seen in the recent past. The growing world economy requires more energy but consumption increases less quickly than in the past.

**Faster transition**

This scenario sees carbon prices rising faster than in the evolving transition scenario, with other policy interventions encouraging more rapid energy efficiency gains and fuel switching.

**Even faster transition**

This scenario matches carbon emissions similar to the International Energy Agency’s sustainable development scenario, which aims to limit the global temperature rise to well below 2°C.

Visit [bp.com/energyoutlook](http://bp.com/energyoutlook) for more information on our projections of future energy trends and factors that could affect them out to 2040.
Society is demanding solutions for more energy, delivered in new and better ways for a low carbon future. Our strategy is designed to meet this dual challenge.

Although we can’t predict the future, insights from our Energy Outlook and Technology Outlook help shape our strategic thinking. We consider how policy, consumer behaviour and advances in technology could affect the pace of the energy transition and how we produce and use energy in the coming decades.

All our projections see renewables growing at a fast pace – but with oil and gas continuing to play a prominent role over the next two decades. That’s why our portfolio is a balance of advantaged oil and gas, a competitive downstream, the trading of all forms of energy and a wide range of low carbon businesses.

Each year, we reinvest about one tenth of the capital employed in new opportunities. At current rates, we produce our proved reserves over 11 years on average. Our rolling programme of activity gives us significant flexibility to redefine our business as the world’s energy needs evolve.

When making strategic decisions, we consider different potential medium-term supply and demand scenarios – including a faster transition to lower carbon sources. To be prepared for uncertainties and opportunities, we test whether a potential investment makes commercial sense using a range of oil, gas and carbon prices.

We believe this approach – actively planning how we can contribute to and be competitive in the energy transition – gives us resilience, whatever the pace and path the world chooses. To reinforce this belief, we base part of our long-term executive compensation on delivery of this strategy.
Energy scenarios
We consider various scenarios, with different assumptions about policy, technology and consumer behaviour.

- Evolving transition
- Faster transition
- Even faster transition
- Ban on sale of cars with internal combustion engines
- Greater policy push for renewables
- Less policy support for a coal to gas switch.

Impact on CO₂ emissions (billion tonnes)

Source: BP Energy Outlook.

Market scenarios
We consider various market scenarios, with different assumptions about supply and demand.

Return to oil price volatility
Oil and gas demand rises lead to a supply crunch and higher prices.

Oversupply of oil and gas
Oil and gas remain cheaper in the long term.

Faster energy transition
Driven by policy and advancements in renewables and energy efficiency.

1. How do we think the energy mix could look in 2040?
2. How do we see energy markets evolving?
3. What are our strategic priorities?
4. How do our top leaders get rewarded on lower carbon progress?

Our strategy
We pursue a strategy that’s resilient to a broad range of energy and market scenarios.

- Growing gas and advantaged oil in the upstream
  Invest in more oil and gas, producing both with increasing efficiency.

- Market-led growth in the downstream
  Innovate with advanced products and strategic retail partnerships.

- Venturing and low carbon energy
  Pursue new opportunities to meet evolving technology, consumer and policy trends.

- Modernizing the whole group
  Simplify our processes and enhance our productivity through digital solutions.

Progress and reward
We reward based on the delivery of our strategy for the evolving energy landscape.

We base 20% of our longer-term share awards on progress against our strategic priorities. This includes measures on our performance in gas, renewables, venturing and renewables trading.

As an underpin, the board considers progress on issues such as reducing emissions, improving our products and creating low carbon businesses – as well as total shareholder return, safety and other environmental factors – before determining the final vesting outcome for these longer-term awards.

BP’s board and executive team annually review our strategy.

Embracing the dual challenge
Our commitment to advance a low carbon future

The world’s rising demand for energy is a real opportunity to expand our business and deliver higher returns for our investors. But as we grow, our net operational emissions won’t – and we will help others to curb their emissions.

We will deliver this commitment by reducing emissions in our operations, improving our products and services, and creating low carbon businesses. This is just the latest step in our 20-plus year journey – but a significant one and one we plan to build on in the years to come.

By setting tough targets and aims – and sharing them – others can monitor our progress. We’ll review these regularly so we can keep them up-to-date with changes in our portfolio, protocols and other factors.

Our low carbon ambitions

Reducing emissions in our operations

Zero
net growth in operational emissions out to 2025

3.5Mte
of sustainable GHG emissions reductions by 2025

Targeting methane intensity of 0.2% and holding it below 0.3%

Improving our products

Provide lower emissions gas

Develop more efficient and lower carbon fuels, lubricants and petrochemicals

Grow lower carbon offers for customers

Creating low carbon businesses

Expand low carbon and renewable businesses

$500 million invested in low carbon activities each year

Collaborate and invest in the Oil and Gas Climate Initiative’s $1 billion fund for research and technology

Visit bp.com/targets for specifics on these nine goals and bp.com/energytransition for information on our wider programme.
Using carbon offsets to support our low carbon ambitions

With carbon offsets, a reduction in greenhouse gas emissions in one place compensates for emissions made elsewhere. BP is a leader in developing and using offsetting programmes. And, we will use offsets to underpin our low carbon ambitions.

Carbon offsets are created through investment in activities that reduce greenhouse gas emissions or absorb carbon dioxide (CO₂). That could be initiatives that provide lower carbon alternatives, like renewable energy or cookstoves to replace open fires. Or it could be projects that protect or enhance natural resources that soak up CO₂ from the atmosphere, such as land and forests.

Carbon offsetting is essential for reaching the Paris goals – and we consider it a valuable supplement to our own emissions reduction activities.

Our Target Neutral programme provides a means for individuals and organizations to reduce their carbon footprint through offsetting. Over the past 10 years, we have built up significant expertise in carbon management projects around the world.

We plan to offset any increase in our operational emissions above 2015 levels that’s not covered by our sustainable reductions activity. This means that, out to 2025, we’ll have no net increase in our carbon footprint, even as our production grows.

We currently offer more than 20 carbon neutral products and services to our customers, using Target Neutral to offset the emissions.

And, we are helping to grow markets for carbon credits through the sale and purchase of credits and by increasing their overall supply. We are able to use our powerful market insights and innovative platforms to help companies meet their own emissions reduction commitments, while providing income to the people who run the projects.

In 2017 alone, we financed low carbon projects that resulted in emissions reductions of more than 12 million tonnes of CO₂ equivalent.

How offsetting works

BP helps people and companies reduce their carbon footprint for:
- Compliance needs
- Corporate responsibility
- Individual choice

BP supports a diversity of projects, including:
- Forest protection
- Biogas initiatives
- Cookstoves

BP uses carbon credits to:
- Offset our own operational emissions growth
- Make some of our products carbon neutral
- Trade with companies to meet their compliance and voluntary needs
BP’s new Advancing Low Carbon accreditation programme is specifically designed to encourage every part of BP to pursue lower carbon opportunities, by providing a framework for us to highlight activities that demonstrate a better carbon outcome.

Qualifying activities range from emissions reductions in our operations to carbon neutral products, from investments in low carbon technologies to our renewables businesses. We undertake these activities through our own businesses as well as in partnership with others.

Deloitte has assessed our programme and criteria and independently assured the activities and their greenhouse gas (GHG) emissions savings or offsets.

Our Advancing Low Carbon programme highlights many, but not all, of BP’s actions on low carbon.

### Assessment criteria

The activities must:

- **Deliver a better carbon outcome by doing one of the following:**
  - Reducing GHG emissions
  - Producing less carbon than competitor or industry benchmarks
  - Providing renewable energy
  - Offsetting carbon produced
  - Furthering research and understanding to advance low carbon
  - Enabling BP or others to meet their low carbon objectives.
- **Go beyond what is required to meet relevant carbon emissions regulations.**
- **Be either directly delivered by BP or by a BP partner.**
- **Be up and running.**
- **Comply with Advancing Low Carbon programme requirements on GHG calculation methodologies.**
- **Deliver a carbon outcome that is intended to be irreversible.**

Visit [bp.com/advancinglowcarbon](http://bp.com/advancinglowcarbon) for more details on each activity and our accreditation programme.
Accredited activities in the first year of the programme

Reducing GHG emissions
- Sustainable GHG emissions reductions – actions to improve energy efficiency and reduce methane emissions and flaring in our operations.
- BP biojet – jet fuel made with recycled cooking oil.
- Oil tankers – new, more energy efficient ships.
- Castrol low viscosity lubricants – which help improve vehicles’ fuel economy.
- Onyx InSight – investing in improving the maintenance efficiency of wind turbines.
- PTAir – a chemical feedstock with a lower carbon footprint than the average European PTA.

Providing renewable energy
- Brazil biofuels and biopower.
- Wind energy.

Offsetting carbon produced
- Air BP into-plane fuelling services.
- BP and Aral fuel cards – help fleet customers offset their carbon emissions.
- PTAir Neutral – a carbon neutral chemical feedstock.
- Castrol Optigear – carbon neutral lubricants for the wind industry.
- Castrol Professional – carbon neutral engine oil.
- Castrol Transmax – carbon neutral transmission fluids.
- Castrol VECTON – a carbon neutral range of lubricants for the commercial trucking industry.

Furthering research and understanding to advance low carbon
- Anhydride – a chemical feedstock with a lower carbon footprint.
- Butamax – a joint venture with DuPont to develop advanced biofuels.
- Castrol GTX ECO – a motor oil that delivers a 10% CO₂ reduction over the product’s life cycle, compared with Castrol GTX Diesel 15W-40.
- NEXCEL – an oil cell that is designed to reduce CO₂ emissions by helping oil to warm up more quickly.
- Solidia – investing in producing concrete with a lower carbon footprint.
- Tricoya Technologies – investing in producing more durable wood products.
- Carbonfree Chemicals – investing in a new technology that captures carbon emitted during cement production.

Producing less carbon than competitor or industry benchmarks
- BP biojet – jet fuel made with recycled cooking oil.
- Oil tankers – new, more energy efficient ships.
- Castrol low viscosity lubricants – which help improve vehicles’ fuel economy.
- Onyx InSight – investing in improving the maintenance efficiency of wind turbines.
- PTAir – a chemical feedstock with a lower carbon footprint than the average European PTA.

Enabling BP or others to meet their low carbon objectives
- BP’s participation in:
  - CO₂ Capture Project.
  - Climate and Clean Air Coalition’s Oil and Gas Methane Partnership.
  - Oil and Gas Climate Initiative.

We estimate the total emissions saved or offset from the accredited activities using a variety of methodologies and baselines. The figures are aimed at illustrating the impact of the programme as a whole rather than a quantification of specific savings made by BP or by BP partners. The scope of accredited activities is wider than, and unaligned with, the scope of activities giving rise to emissions within BP’s operational emissions boundary. Therefore, the figures are not directly comparable to BP’s reported emissions.
Two decades of taking action on climate change

1997
BP’s chief executive, Lord Browne, calls for precautionary action to cut greenhouse gas (GHG) emissions.

1998
BP pilots an internal emissions trading scheme, helping to demonstrate the viability of emissions trading for the industry.

1999
BP is a founding member of the International Emissions Trading Association.

2000
BP initiates the CO₂ Capture Project with other companies and governments to develop carbon capture and storage (CCS) technology.

2007
BP commissions its first wind farm.

2009
BP signs up to the World Bank Zero Routine Flaring by 2030 initiative.

2009
BP and DuPont form joint venture Butamax to develop bio-isobutanol, an advanced biofuel.

2009
BP begins using a carbon price in investment decisions.

2011
BP becomes the largest operator of Brazil biofuels among our oil and gas peers.

2014
BP starts participating in the Oil and Gas Climate Initiative.

2015
BP joins the Climate and Clean Air Coalition’s Oil and Gas Methane Partnership.

2015
BP starts up Zhuhai 3 petrochemical plant, delivering 65% lower GHG emissions than comparable plants.

2016
BP is the world’s first supplier of commercial jet biofuel using existing infrastructure at Norway’s Oslo airport.

Two decades of taking action on climate change.
The energy transition

2000
BP partners with Princeton University on the Carbon Mitigation Initiative, set up to find solutions to the carbon and climate problem.

2002
BP begins tracking sustainable GHG reduction activities from our operations.

2003
Tsinghua-BP Clean Energy Research and Education Center launches in China.

2004
BP and partners launch a CCS project at the In Salah gas field in Algeria.

2005
BP launches Alternative Energy business.

2006
BP launches Target Neutral, our carbon offsetting programme for customers.

2008
BP, via its Butamax joint venture, acquires an ethanol plant in Kansas in the US to commercialize bio-isobutanol.

2017
BP becomes a founding member of the Climate Leadership Council, a US group pushing for carbon pricing.

2017
BP, via its Butamax joint venture, acquires an ethanol plant in Kansas in the US to commercialize bio-isobutanol.

2017
BP partners with Lightsource to develop and manage large-scale solar projects.

2017
BP signs up to the Methane Guiding Principles, with seven peer companies.

2018
BP introduces Advancing Low Carbon accreditation programme.

2018
BP sets targets for sustainable GHG reductions and methane intensity.
How are you making your operations fit for a low carbon future?

We are looking at everything from how we make our operations more energy efficient to how we can reduce flaring and methane emissions. We also factor carbon into decisions for future projects – this is where we have the greatest opportunity to manage GHG emissions in the years ahead and to maintain a portfolio that is sustainable and resilient.

Sue Ford
Director, regulatory compliance and environment, upstream health, safety and environment, BP
BP is targeting zero net growth in our operational emissions.

The International Energy Agency estimates that energy efficiency could contribute around 40% of the emissions reductions needed to stay below the 2°C goal. We are playing our part by improving the efficiency of our existing operations and designing our new major projects to emit fewer greenhouse gases (GHGs).

We have set a sustainable emissions reductions target of 3.5 million tonnes out to 2025. Our operating businesses will deliver this through improved energy efficiency, fewer methane emissions and reduced flaring – all leading to permanent, quantifiable GHG reductions.

And, to ensure that as our business grows, our carbon footprint does not, we’ll offset any increase in emissions above 2015 levels that’s not covered by our sustainable reductions activity.
Our GHG emissions performance

We saw a slight decrease in our direct greenhouse gas emissions in 2017.

This reduction was primarily due to operational changes such as planned shutdowns at several of our refineries for maintenance and actions taken by our businesses to reduce emissions in areas such as flaring, methane and energy efficiency. Our sustainable GHG emissions reductions amounted to 0.5Mte in 2017.

However, we saw increases in the total volume of flaring – the controlled burning of gas during oil and gas production – in our upstream business. This was mainly due to the start up of our Khazzan gas development in Oman.

We also track GHG intensity, which is the quantity of GHG emitted per a defined unit of production or processing.

In 2017 we saw an improvement in our upstream GHG intensity, mostly due to changes in two countries. In Angola, emissions reduced due to increased gas being captured and exported to the liquefied natural gas facility. And, we increased production in Egypt as we started up the first phase of our West Nile Delta development.

---

**Direct greenhouse gas emissions**
(MteCO₂ equivalent)

- 2017: 50.5
- 2016: 51.4
- 2015: 51.2

**Greenhouse gas intensity**
(TeCO₂ equivalent/unit)

- Upstream (per thousand barrels of oil equivalent)
  - 2017: 30.4
  - 2016: 34.7
  - 2015: 32.7

- Refining (per utilized equivalent distillation capacity)
  - 2017: 923
  - 2016: 951
  - 2015: 944

- Petrochemicals (per thousand tonnes)
  - 2017: 304
  - 2016: 287
  - 2015: 290

**Energy efficiency**
(indexed to 2010)

- Upstream (production/consumption loss)
  - 2017: 101.0
  - 2016: 102.4
  - 2015: 98.3

- Refining (energy intensity index performance)
  - 2017: 104.4
  - 2016: 103.1
  - 2015: 103.8

- Petrochemicals (energy intensity)
  - 2017: 79.9
  - 2016: 82.3
  - 2015: 94.5

---

*a Comprises 100% of emissions from activities that are operated by BP.

*b Comprises our share of BP’s consolidated entities and equity accounted entities, other than BP’s share of Rosneft.
Tackling methane

The Intergovernmental Panel on Climate Change data suggests that methane accounts for around 20% of manmade greenhouse gas emissions. Since methane is the primary component of natural gas, BP is committed to taking a leading role in addressing the methane challenge.

Methane has a shorter lifetime in the atmosphere than carbon dioxide, but it has a higher global warming potential. So, we are targeting a methane intensity of 0.2%, and holding it below 0.3%. This includes the methane emissions from our operations where gas goes to market as a percentage of that gas – accounting for more than 90% of methane emissions from our operated oil and gas assets. We don’t include methane emissions that result from gas that is only reinjected, recycled or associated with assets where BP doesn’t produce the gas.

We inspect our major operations for leaks at least annually and often more frequently, depending on the technique used and regulatory requirements. In many locations, we use technology like infrared cameras to identify and help prevent small seeps from becoming more hazardous leaks.

At our Sangachal terminal in Azerbaijan, we trialled infrared cameras with specialized software to detect and more accurately quantify methane emissions. This will help us prioritize leak repairs and improve our reporting.

Thirteen of our 22 major projects scheduled to be delivered by 2021 are gas, so we’re designing them in ways that should reduce methane emissions from the outset. As one example, our Khazzan site in Oman has a central processing facility so there’s no need for processing equipment at each well site. Fewer processing sites lowers the potential for emissions.

Working with others

We are partnering with our peers, non-governmental organizations (NGOs) and academic institutions to advance how the industry as a whole can detect, quantify and reduce emissions.

- **Investment in technology and data collection**
  - Oil and Gas Climate Initiative
  - OGCI is investing in technologies to reduce emissions and aiming to work towards near-zero methane emissions from the gas value chain.

- **Industry principles**
  - Methane Guiding Principles
  - BP and seven peers have agreed to five principles for reducing methane emissions across the gas value chain. The principles were developed by a coalition of industry, institutions, academics and NGOs.

- **Review of primary sources of emissions**
  - Oil and Gas Methane Partnership
  - This initiative – part of the Climate and Clean Air Coalition – looks at methane emissions at an operational site level which will help to inform actions we can take to reduce emissions.

- **Best practice sharing with US peers**
  - The Environmental Partnership
  - BP’s US onshore business has signed up to this API initiative, in which member companies commit to minimize methane emissions and to share information on technology deployment.

- **Research into methane and global warming**
  - Carbon Mitigation Initiative
  - We’re supporting Princeton University in its work to enhance the scientific understanding of methane and its contribution to global warming.
We seek to address the potential impacts of a changing and unpredictable climate – such as heatwaves, storms and rising sea levels – on our new projects from the design phase.

For our Clair Ridge project in the North Sea, we considered the physical resilience of the operation over its lifetime, as we expect it to be in use for around four decades. We designed the two platforms to withstand possible changes in sea level and wave patterns.

Our operations and projects can draw on guidance, including in-house meteorological expertise, to help them manage potential risks from a changing climate.

Some of our sites are located in areas prone to severe weather, such as hurricanes, and have specific measures in place to manage these risks. Our Cooper River petrochemicals plant in the US, for example, increases its inventory of raw materials during hurricane season and has back-up systems for emergency power supply.

We are working to review projections of severe weather events and climate conditions to evaluate how these may affect our projects and operations in the future.

Assessing risks to our facilities

We are one of the largest natural gas producers in the US and many of our 9,000 wells are in remote locations with limited access to the electricity grid. This means that our facilities rely on gas to power the equipment, making this part of our business responsible for around half of BP’s total operated methane emissions. So, we’ve made methane reduction here a priority.

More than a decade ago, we began swapping out our high-bleed controllers with ones that emit less methane. Since then, we’ve replaced 10,000 devices. We are now in the final stretch, looking at ways to replace the last 1%.

And, by drilling horizontal wells, we reduce the number of production facilities, along with their associated emissions.

We periodically remove liquid from our wells so gas can flow. Methane can be emitted during this process, so we’re using new technologies, such as enhanced automation, to reduce these emissions.

We are also trialling pumps powered by solar energy rather than gas, as well as the use of drones and truck-mounted laser sensors to detect and quantify methane leaks.

The actions we’ve taken to permanently reduce greenhouse gas emissions in our Lower 48 business led to a reduction of 56,000 tonnes in 2017.

Tackling methane in our Lower 48 business

We are one of the largest natural gas producers in the US and many of our 9,000 wells are in remote locations with limited access to the electricity grid. This means that our facilities rely on gas to power the equipment, making this part of our business responsible for around half of BP’s total operated methane emissions. So, we’ve made methane reduction here a priority.

More than a decade ago, we began swapping out our high-bleed controllers with ones that emit less methane. Since then, we’ve replaced 10,000 devices. We are now in the final stretch, looking at ways to replace the last 1%.

And, by drilling horizontal wells, we reduce the number of production facilities, along with their associated emissions.

We periodically remove liquid from our wells so gas can flow. Methane can be emitted during this process, so we’re using new technologies, such as enhanced automation, to reduce these emissions.

We are also trialling pumps powered by solar energy rather than gas, as well as the use of drones and truck-mounted laser sensors to detect and quantify methane leaks.

The actions we’ve taken to permanently reduce greenhouse gas emissions in our Lower 48 business led to a reduction of 56,000 tonnes in 2017.
What are your plans for growing your renewable and low carbon businesses?

It’s an exciting time for BP. While we’re building up our renewables business and growing gas in our portfolio, we are exploring new business models. The key thing is that we want to invest in the right opportunities at the right time – so we’re constantly scanning the horizon.

Lamar McKay
Deputy group chief executive, BP
Renewables are the fastest-growing energy source in the world today, on course to provide at least 14% of the global energy mix by 2040. BP has been in the renewables business for more than 20 years – we’re one of the largest operators among our peers and we’re expanding as we see more opportunities.

Biofuels
We believe that biofuels offer one of the best large-scale solutions to reduce emissions from transportation.

We produce ethanol from sugar cane in Brazil. This ethanol has life cycle greenhouse gas (GHG) emissions that are 70% lower than conventional transport fuels. In 2017 our three sites produced 776 million litres of ethanol equivalent.

Brazil is one of the largest markets globally for ethanol fuel. To better connect our ethanol production with the country’s main fuels markets, we are partnering with the world’s leading ethanol and sugar trader, Copersucar, to operate a major ethanol storage terminal. The terminal is located close to key transport networks and pipelines.

Our largest biofuels mill is certified to Bonsucro, an independent standard for sustainable sugar cane production.

Advanced biofuels
Butamax technology, developed in partnership with DuPont, converts sugars from corn into an energy-rich biofuel known as bio-isobutanol. It can be blended with gasoline at higher concentrations than ethanol and transported through existing fuel pipelines and infrastructure.

Butamax plans to upgrade its recently-acquired ethanol plant in Kansas to enable it to produce bio-isobutanol to demonstrate the technology to ethanol producers.

We must employ disruptive thinking and innovation to unlock the power of renewable raw materials. Butamax is taking the next step forward in advancing the bioeconomy, which supports economic growth and opportunity in rural communities.

William F. Feehery
President, DuPont Industrial Biosciences
The energy transition

Biopower

We create biopower by burning bagasse, the fibre that remains after crushing sugar cane stalks. Around 70% of the biopower generated is exported to the local electricity grid.

This is a low carbon power source, with the CO₂ emitted from burning bagasse offset by the CO₂ absorbed by sugar cane during its growth.

Solar energy

Solar could generate 10% of total global power by 2040.

BP has partnered with Lightsource, Europe’s largest solar development company, which focuses on the acquisition, development and long-term management of large-scale solar projects. We are bringing our global scale, relationships and trading capabilities to drive further growth across the world.

Wind energy

BP is one of the top wind energy producers in the US. We operate 13 sites in seven states and hold an interest in another facility in Hawaii. Together they have a net generating capacity of 1,432MW.

We founded Lightsource to lead the solar revolution and chose to partner with BP because, like us, their ambition is to build and grow this company for the long term. Solar power is the fastest-growing source of new energy and we are excited to be at the forefront of this development with BP.

Nick Boyle
Chief executive officer, Lightsource BP

2.9m tonnes of CO₂ equivalent avoided through our renewables business in 2017

- **Biofuels**
  - Our ethanol production avoided emissions equal to 260,000 fewer European cars on the road in a year.

- **Biopower**
  - 70% of biopower generated at our biofuels sites goes to the local electricity grid.

- **Solar**
  - $200m investment over three years in Europe’s largest solar development company.

- **Wind**
  - The net generating capacity from our portfolio is enough to power almost 400,000 homes.
Gas produces around half the carbon dioxide (CO₂) emissions of coal when burned to generate power.

That means gas can make a major difference, as happened in the US, where abundant use of gas from shale has helped drive the country’s CO₂ emissions back down to 1990s levels.

Gas is the ideal complement to renewables as it can be a lower carbon, cost-effective back-up to the variability of wind, solar and hydropower generation. Emitting fewer pollutants, it is also better for air quality.

Just as importantly, gas is widely used for heating homes and businesses as well as delivering the high temperatures needed in heavy industries like steel, cement and metals. And, gas is becoming more accessible around the world thanks to a growing global gas market connected by ship and pipeline.

BP is active in finding and producing gas, as well as its transport, storage and sale. This puts us in a good position as the gas market grows and becomes increasingly competitive. And, by tackling methane emissions, we are helping to make sure that gas is a major lower carbon resource for years to come.

See page 26 for information on our renewable gas fuel.

A world that engages in deep decarbonization is a world that’s going to become a lot more electrified. That puts gas at the centre – as a major source of generating electricity.

David Victor
Leading contributor to the Intergovernmental Panel on Climate Change

Focus on the Southern Corridor

The Southern Gas Corridor, one of the largest projects in BP’s portfolio, will connect gas from the Caspian directly to Europe for the very first time. Gas will travel 3,500 kilometres from our Shah Deniz field in the Caspian Sea across five countries to Italy. We plan to deliver gas supplies to Turkey in 2018 and to European markets in 2020.

Once it reaches peak production, this project will provide enough natural gas to meet the needs of every capital city along the Southern Corridor – more than twice over.
BP’s growing natural gas portfolio

Focus on Tangguh

At our Tangguh operation in Indonesia, we convert natural gas into liquid form to make it more practical and commercially viable to transport domestically and to other countries.

This can help countries in the region move more quickly towards gas, rather than using coal. Some of the gas is going to China, where we helped build the country’s first LNG import terminal, and some is making its way to South Korea. And, with our latest expansion activity at Tangguh, we’ll up the output by 50% – much of which will be for use in Indonesia.
Innovations have the potential to disrupt and have big impacts. For example, one company’s technology for carbon reduction in concrete could reduce man-made greenhouse gas emissions by 1%, if deployed globally.

That’s why BP is investing in this company and many others, so we can learn fast and scale up where we can.

We plan to invest around $200 million every year to help incubate and grow lower carbon solutions. This is all part of our near-term plan to allocate at least $500 million a year for low carbon activities, which also includes our renewables businesses and acquisitions.

We view these activities as core to our strategy – with the potential to make a real contribution to our future.
Digital transformation

Artificial intelligence, faster data processing and other digital technologies have great potential for increasing efficiency and driving down emissions.

Castrol’s joint venture with Onyx InSight provides engineering and software services to wind farm operators so that they can monitor the condition of wind turbines and avoid breakdowns.

Low carbon power and storage

Nearly two thirds of the projected growth in world energy demand over the coming decades could come in the form of electricity.

BP is looking at ways to meet customers’ power and storage needs, for example through developing advanced battery technology.

Bio and low carbon products

There is increasing demand for lower carbon versions of fuels, industrial materials and other products. The aviation industry, for one, expects a growth in air travel but is pledging to cut its emissions in half by 2050.

Aviation fuel from waste

Our partner, Fulcrum BioEnergy, has developed a jet fuel made from household waste that has 20% of the carbon footprint of its conventional equivalent. We will distribute and supply biojet into aircraft at key hubs across North America.

Sustainable building materials

We’re working with Tricoya to produce a less carbon-intensive alternative to concrete, metals and plastics. Using acetylation to change the chemical properties of wood, we can create a weather-resistant construction material that does not swell or shrink.
The energy transition

Q / How will electric vehicles affect demand for your products?

A / The shift to electric vehicles will take time to have an impact on fuel and lubricants demand. At BP, we have a team focused on emerging mobility models and we are actively pursuing options. This, along with our innovations in products, makes us well-positioned to meet our customers’ needs today and in the future.

Roy Williamson
Vice president, Advanced mobility unit,
BP
The future of electric vehicles

Electric vehicles have great potential for improving air quality, particularly in urban centres.

Over the past decade, we’ve seen the number of electric vehicles on the road grow exponentially, along with an expanding choice of makes and models. We see this growth continuing; there could be more than 300 million electric cars on the road by 2040. And, in a world with more car sharing and autonomous vehicles, this could mean that about 30% of passenger car kilometres could be powered by electricity.

Some forecasts are higher, some are lower than ours. But, whatever the pace, we estimate that for every 100 million electric cars, oil demand could go down by around one million barrels of oil a day.

As part of the mobility revolution, BP is exploring how our network of 18,300 retail sites around the world can serve our customers’ changing needs by offering a range of products and services, including fast, convenient charging. We’ve invested in FreeWire – which produces an electric charging station on wheels – with plans to roll them out at some of our retail sites in Europe.

Over 85% of cars on the road in 2040 are likely to still be using an internal combustion engine. So, gains in fuel and vehicle efficiency are tremendously important in reducing greenhouse gas emissions. That’s why BP is always looking for ways to improve its products – making them more efficient, producing biofuels and offering ways to offset their emissions.

Our Mobi Charger can be quickly and cost effectively deployed across vast transportation networks. The integrated storage reduces strain on the electrical grid while providing a great fast-charging experience for the electric vehicle driver.

Arcady Sosinov
Chief executive officer, FreeWire Technologies

Kilometres driven by passenger cars by fuel type

![Kilometres driven by passenger cars by fuel type chart]

Trillion kilometres. The sum of the share of kilometres travelled may not equal 100% due to rounding.

Source: BP Energy Outlook.
We are improving our products to help consumers lower their emissions.

Around 80-90% of carbon dioxide emissions from oil and gas products are from their use by consumers in transportation, power plants, industries and buildings. So one of the biggest contributions we can make to advance the energy transition is by providing products and services that help consumers lower their carbon footprint.

We provide customers with fuel for transport, energy for heat and light, lubricants to keep engines moving and the petrochemicals products used to make everyday items as diverse as paints, clothes and packaging.

Many of our products and services have been accredited with our Advancing Low Carbon programme in 2017 – see pages 8-9.
Target Neutral

We offer customers the opportunity to offset their carbon emissions through BP Target Neutral, which invests in emissions reduction projects around the world.

To date, we’ve developed more than 20 carbon neutral products and services to help our customers reduce their impact. And, over the past decade, BP Target Neutral has offset more than three million tonnes of CO₂ equivalent; that is the same as taking 1.3 million cars off UK roads for a whole year.

We estimate that the projects we supported in 2017 are helping to improve the livelihoods of more than two million people through better access to energy, health, education, and jobs, as well as protecting 40,000 hectares of globally significant habitat.

An independent selection panel considers each project’s carbon abatement attributes, as well as their contribution to the UN Sustainable Development Goals.

As part of a comprehensive target-driven strategy, consistent with achieving a net zero carbon world, offsetting can channel much-needed finance to carbon reduction projects and the expansion of sustainable land use management.

Mark Kenber
Mongoose Energy CEO and Chair of the BP Target Neutral Advisory and Assurance Panel
Q / Which policies do you think are necessary to make a 2°C world a reality?

A / That’s easy: carbon pricing. It’s the most comprehensive and efficient way of reducing carbon everywhere in the economy. Plus, to get promising low carbon technologies like renewables and carbon capture, use and storage up and running, they need additional targeted support for a limited period of time.

Paul Jefferiss
Head of policy, BP
Advocacy for carbon pricing

We believe that carbon pricing provides the right incentives for everyone – energy producers and consumers alike – to play their part in reducing emissions. It makes energy efficiency more attractive and makes low carbon solutions, such as renewables and carbon capture, use and storage, more cost competitive.

A fifth of the world’s GHG emissions are now covered by carbon pricing systems, double the coverage from just five years ago.

We expect around two thirds of BP’s direct emissions will be in countries subject to emissions and carbon policies by 2020.

BP has played a major role in helping governments design their trading systems, and we’ve been active as a trader in the world’s current emissions trading systems since their inception.

Pricing carbon adds a cost to our industry’s production and our products – but it also benefits the sector by providing a roadmap for future investment and a level playing field for all energy sources.

We became a founding member of the US-based Climate Leadership Council in 2017. The council is considering a carbon tax that would be returned to citizens in the form of dividends.

We are also working with our peers and other companies, governments and civil society to help support the expansion of carbon pricing through the Carbon Pricing Leadership Coalition.

Our internal carbon price

To help anticipate greater regulatory requirements affecting our GHG emissions, we use a carbon cost when evaluating our plans for large new projects and ones where there could be material emissions costs.

In designing our new Glen Lyon vessel in the North Sea, for example, we introduced a flare gas recovery system to reduce GHGs reaching the atmosphere and we recover waste heat from the vessel’s turbines for use in operations.

In industrialized countries, our internal carbon price is currently $40 per tonne of CO₂ equivalent, and we also stress test at a carbon price of $80 per tonne.
Carbon capture, use and storage

**CCUS has a vital role to play in meeting the objectives of the Paris Agreement. It can achieve deep emissions reductions in existing power infrastructure and energy-intensive industries that rely on the use of fossil fuels.**

Collaboration is required to make CCUS a reality. The technology has been in use for more than 20 years, but needs governmental support – through a carbon price and other policy measures – to accelerate its deployment. Through the Oil and Gas Climate Initiative, we are working to identify the policy mechanisms that may best enable the roll-out and scale-up of CCUS on a regional basis.

BP has worked on the development of CCUS for many years with a project in Algeria, as well as through the CO₂ Capture Project, which is piloting technology and demonstrating secure geological containment.

**How CCUS works**

At BP, we are exploring near-term opportunities to deploy CCUS in our own operations, projects and products. For example, as part of a joint venture in the United Arab Emirates, we are using CO₂ from industrial processes to enhance oil recovery.

See page 22 for information on how our partner Solidia, is turning carbon into concrete.

---

We know that we face an unprecedented challenge in meeting climate goals. Without CCUS, this challenge will be infinitely greater. We also know that this is essentially a policy question.

International Energy Agency
Q / How does BP maintain safety in a competitive environment?

A / We’re using technology to take people out of harm’s way. For example, we can use drones to carry out inspections rather than have people working at height. We are also reinforcing a culture of care where everyone is looking out for each other – and that doesn’t change whatever the oil price.

Fawaz Bitar
Head of global operations organization, Upstream, BP
We aspire to no accidents, no harm to people and no damage to the environment. To deliver this, we carefully plan our operations, identifying potential hazards and managing risks at every stage.

We design our facilities to appropriate industry standards and manage them throughout their lifetime.

**Human performance in safety**
People, and how they interact with equipment, processes and each other, are fundamental to a safe working environment. We have introduced techniques for teams to analyse and redesign tasks to reduce the chance of mistakes occurring. An example of this is when the team working in the control room at our Tropical biofuels mill in Brazil redesigned the way data is presented to make it easier for them to monitor operations.

**Managing contractor safety**
More than half of the hours worked by BP are carried out by contractors. So, their skills and performance are vital to our ability to carry out our work safely and responsibly.

Our standard model contracts include health, safety and security requirements. Through bridging documents, we define how our safety management system co-exists with those of our contractors to manage risk on a site. And for our contractors facing the most serious risks, we conduct quality, technical, health, safety and security audits before awarding contracts. Once they start work, we continue to monitor their safety performance.

We believe that this is the future for training operational teams and crews and BP is, together with Maersk Training, showing the way for the industry.

**Johan Uggla**
Chief executive officer, Maersk Training
Improving safety with technology

Digitalization and visualization technologies are proving increasingly useful in making the world safer and more efficient.

At BP, our wells data platform ARGUS holds historical and real-time data on nearly all of the 2,500 wells that we operate globally, giving our engineers the ability to access and analyse alerts quickly and remotely. This enables early identification and rapid response should an issue arise.

Automation is changing the way we access and monitor our operations in difficult to reach areas. For example, we are testing an autonomous pipeline survey system along our Clair field pipeline in the UK North Sea. Unmanned vessels use artificial intelligence to inspect the pipeline, gather data and provide almost instant alerts if they detect anything unusual.
Safety

Keeping people safe

We focus on keeping employees and contractors safe and alert to potential hazards that could occur in their work.

Nothing matters more than every one of our people returning home safely each day. Tragically, we suffered one fatality in 2017, when a firefighter died in the course of his duties at our biofuels business in Brazil. We deeply regret this loss and continue to work towards eliminating injuries and fatalities in our work.

Everyone working at BP has the authority to stop unsafe work. Our leaders are accountable for helping to build this culture of care in their teams and every employee is responsible for keeping themselves and each other safe.

We work with our peers to create industry-wide standards. For example, dropped objects are one of the most common hazards in the oil and gas industry. This is because a lot of our work is done at height and uses heavy equipment. Within industry group IPIECA, we have developed a global performance standard to help us monitor and improve prevention programmes, investigate incidents and implement corrective actions from lessons learned.

Security

As a global business, BP monitors for hostile actions that could harm our people or disrupt our operations. We particularly look at operating areas affected by political and social unrest, terrorism, armed conflict or criminal activity.

Our 24-hour response information centre keeps watch over global events and related developments, providing real-time information and accounting for staff’s whereabouts. This meant that in March 2017 we were aware of the terrorist attack in London’s Westminster almost immediately. Within minutes we knew which employees had scheduled meetings or travel plans in the surrounding area, so we were able to confirm their safety and provide advice.

Cyber threats

Cyber attacks are on the rise and our industry is subject to evolving risks from hacktivists, cyber criminals, terrorists and insiders. We have experienced threats to the security of our digital infrastructure, but none of these had a significant effect on our business in 2017.

We collaborate closely with governments, law enforcement and industry peers to understand and respond to new and emerging threats.

To encourage vigilance among our employees, our cyber security programme covers topics such as email phishing and the correct classification and handling of our information.

We have a strong speak-up culture. It is the catalyst that inspires people to take ownership, not only for their personal safety, but also for the safety of others.

Joel Johnson
Safety committee chair, BP’s Cherry Point refinery
Keeping our people safe during Hurricane Harvey

Houston, Texas, is home to BP’s US headquarters. With around 4,300 people, it is also our largest employee base in the world. In 2017, Hurricane Harvey dumped historic levels of rainfall on the city with flooding damaging hundreds of our employees’ homes and several of our office buildings.

Our immediate priority was the safety of our employees and their families. BP’s storm response teams, comprising hundreds of company volunteers, supported rescue and recovery efforts in the area. BP also helped employees clean up and dry out their homes.

Our headquarters were severely flooded, but our contingency plans for natural disasters meant that we were able to keep our businesses running. For example, before the hurricane hit, we moved around 200 of our traders and their families to our back-up trading site in Dallas.

During this difficult time, employees rallied together to support each other and the company.

When Harvey struck land, none of us could have predicted the road ahead. In the face of extraordinary conditions, the BP family has been – quite simply – extraordinary. I couldn’t be prouder to work with this team. As we’re witnessing, natural disasters can bring tremendous physical destruction, but they also can bring out the best in people.

John Mingé
Chairman and president, BP America
We track our safety performance using industry metrics and work to continuously improve personal and process safety across BP.

In 2017 we continued to see a reduction in the overall number of process safety events, despite a slight increase in tier 1, the more serious events. We also saw a small increase in our recordable injury frequency and day away from work case frequency.

Improving safety in our operations is a high priority and we are working on it right across the business.

We investigate safety incidents and near misses to identify any potential underlying themes and we use leading indicators, like inspections and equipment tests, to monitor the strength of controls to prevent incidents. What we learn from performance insights helps us focus our safety efforts. For example, we are implementing actions to support the performance and reliability of our people, with the express aim of reducing the chances of mistakes occurring.

Proactively managing equipment corrosion is also a focus for us and we believe this is helping to deliver improvements in process safety in our upstream and downstream businesses.

We use leading indicators, like inspections and equipment tests, to monitor the strength of controls to prevent incidents. What we learn from performance insights helps us focus our safety efforts. For example, we are implementing actions to support the performance and reliability of our people, with the express aim of reducing the chances of mistakes occurring.

Proactively managing equipment corrosion is also a focus for us and we believe this is helping to deliver improvements in process safety in our upstream and downstream businesses.

Visit [bp.com/hsechartingtool](http://bp.com/hsechartingtool) for safety data.
Q / Has your human rights policy changed the way you do business?

A / Before we launched our policy in 2013 our work was focused mainly on specific sites. The policy reinforced our responsibility to respect human rights and has helped shape our approach across BP. Importantly, it also informs how we seek to influence our partners and suppliers.

Nili Safavi
Manager, human rights and social performance, BP
Respecting human rights

Respect is one of BP’s values and guides how we interact with all those who come into contact with our operations.

We are committed to identifying and addressing human rights risks and impacts directly linked with our business activities, including the rights of our workforce and those living in communities affected by our activities.

Our current focus areas include the recruitment, working and living conditions of contracted workforces at our sites, responsible security, community grievance mechanisms and channels for workforces to raise their concerns.

We encourage employees, contractors, communities and other third parties to speak up if they see something they think could be unsafe or unethical. At our worksites we help make sure people are aware of our confidential global helpline OpenTalk, our community complaints systems and workforce grievance mechanisms.

International standards and principles

- The International Labour Organization’s Declaration on Fundamental Principles and Rights at Work
- The International Bill of Human Rights
- UN Guiding Principles on Business and Human Rights

Our human rights focus areas

- Labour rights
  - Health and safety
  - Forced labour and human trafficking
  - Fair working and living conditions
  - Non-discrimination
  - Channels to raise concerns
- Security and human rights
  - Interaction between security forces, communities and workers
- Rights of people in communities
  - Livelihoods and local employment
  - Consultation and grievance mechanisms
  - Socio-economic, health and environmental impacts

Our own standards

- Code of conduct
- Human rights policy
- Expectations of suppliers
- Operating management system
Labour rights

Our employees, as well as our contractors and suppliers, should work in safe, healthy, secure and fair conditions.

Employees
Respect for employees’ human rights is integral to our recruitment, management and diversity and inclusion processes. Our code of conduct requires employees to report any human rights abuses in our operations or those of our business partners.

Working with contractors and suppliers
We operate in 70 countries and have around 60,000 suppliers, with thousands more supporting them. We expect contractors and their employees to act in accordance with our code of conduct, human rights policy and our expectations of suppliers. Our standard procurement contracts include requirements for suppliers to respect internationally recognized human rights, with a specific ban on the use of forced, trafficked or child labour.

We held supplier events to communicate our expectations on labour rights in a number of locations in 2017, including Brazil, Indonesia, Iraq and the UK. We discussed the action we are taking, the need to raise concerns and the importance of our suppliers communicating this to their own employees, suppliers and business partners.

As one example, we provided training to contractors and sub-contractor teams working on our Tangguh expansion project in Indonesia. We discussed the risks faced in our industry and emphasized the individual role we all play in spotting potential signs and reporting concerns.

Drawing on our work with industry peers, we developed a human rights due diligence process that can be used to screen suppliers in a consistent way anywhere in the world. Following a pilot of the process, we are now using it with suppliers on a risk-prioritized basis to understand how they manage these risks in their business and supply chain.

All of our workforce, and the workforces of those who support us, should be treated with respect and dignity.

Bob Fryar
Executive vice president of safety and operational risk, BP
Labour rights assessments
We conduct labour rights audits or assessments when appropriate. Focus areas tend to be working hours, recruitment processes, freedom of movement, employment contracts and channels for workers to raise complaints without retaliation.

Where we find an issue, we try to work with the contractor to resolve it so as to improve the situation of the people affected. If a serious breach is found and no corrective action is taken, we reserve the right to terminate contracts.

Modern slavery risk reviews
Some parts of our supply chain may pose a higher risk of labour rights and modern slavery issues than others. We take a risk-based approach to monitoring our contractors and suppliers by considering:

- countries that pose a high degree of risk, as identified by risk analytics firm Verisk Maplecroft and other data sources
- activities that rely on manual labour, such as construction, catering, cleaning and certain types of manufacturing
- factors related to the vulnerability of the workforce, such as poverty levels; ethnic, religious or gender minorities; and migrant workers.

Using this approach, we prioritized 17 businesses for modern slavery risk reviews in 2017. We then mapped our supply chain in these cases to identify high risk contractors. In some instances, this initial screening led to further assessment through questionnaires or on-site labour rights assessments, including worker interviews.

The assessments focus on key warning signs, such as passport retention, recruitment or other fees, wage deductions, employment contracts, working hours, shift patterns and living conditions.

Visit bp.com/modernslavery

Fast facts

- 17 businesses prioritized for modern slavery risk review
- 1,000+ people participated in training on labour rights and modern slavery
- 44 human rights training events
Focus on Georgia

Our South Caucasus Pipeline Expansion project will transport gas from Azerbaijan to markets in Europe. In Georgia alone, around 5,000 people helped to construct three facilities and a pipeline, with around 10% of the workforce originating from other countries such as India and Thailand.

We assessed the labour rights practices of our construction contractors and certain sub-contractors. We found no instances of forced labour, but we identified some labour rights concerns, such as not having documents in the workers’ native languages.

The assessment reinforced the importance of:

• clear contract clauses on employee relations and labour rights
• a monthly on-site labour management forum so workers can share concerns or ask questions
• regular reviews of employee terms and conditions, welfare and grievances by experienced employee relations professionals within the contractor organizations.

We are sharing what we learned from this assessment with our businesses around the world.

It was essential for us to work closely with the contractors as they employ the majority of the workforce. The strong support we had from all parties including contractors, sub-contractors and the workforce was key to conducting the review.

Kelly Goddard
Environmental and social manager, South Caucasus Pipeline Expansion project, BP
Focus on Saudi Arabia

One of our joint ventures is setting up a plant that will blend Castrol lubricants. Our partner is building the plant, and the peak of construction will involve more than 250 workers, largely made up of migrant labour employed through four or five major contractors.

We have worked closely with our partner to support them in assessing the risk of modern slavery – both before and after contracts are awarded. As a result, our partner has:

• checked the recruitment, working practices and worker grievance mechanisms of shortlisted companies
• held meetings with contractors on worker rights and welfare during site visits
• added detailed human rights contract clauses that prohibit passport retention, contract substitutions and charging workers recruitment fees.

After construction work began, the joint venture discovered that a few companies had sub-contracted work without authorization and in some cases delayed payments to those sub-contractors. As a result, people were brought together to request that no further unauthorized sub-contracting takes place.

Our partner is monitoring contractor and sub-contractor performance through regular site visits and labour rights training.

The guidance and support that BP shared as part of the venture on how they identify human rights risks influenced us significantly. It helped us address new areas of concern relating to work practices in the local industry and our project is now progressing in the right way.

Suleiman Abdullah
Director, Al Khorayef Lubricants Manufacturing Company Limited
Livelihoods and communities

We recognize that our activities could adversely impact the rights of people in communities close to our sites.

We work hard to prevent and reduce any negative impacts on the livelihoods, land, environment, culture, health and wellbeing of people in communities near our activities, including indigenous peoples. We screen our major projects to identify and manage any potential impacts, including human rights.

If we do cause, or contribute to, adverse impacts on the human rights of communities near our operations, we are committed to providing for, or co-operating in, making it right.

In Trinidad & Tobago, for example, we conducted seismic surveys to develop our Juniper gas field. This affected people working in the local fishing industry as it meant they could not work in the area for safety reasons. Following consultations with fishing associations and communities, we made payments for temporary loss of livelihood to those affected.

In Azerbaijan, the state leased or purchased land from its owners and transferred it to the South Caucasus Pipeline Company, which is a consortium of energy companies including BP. As part of our process, we are restoring the land and have paid compensation, which included a livelihood restoration allowance for possible loss of crop productivity after the land had been reinstated and returned.

Security and human rights

Providing security for our assets around the world can be complex, especially in locations where there is a higher likelihood of conflict or violent crime.

BP works with security forces who protect our facilities to reinforce the importance of respecting human rights. We support the Voluntary Principles on Security and Human Rights. These principles guide how we work with the security forces that protect our facilities. They emphasize the need to understand and respect the human rights of our workforce and people living in communities near our operations.

We provide training on the principles for our employees accountable for managing security and conduct assessments to identify areas where we can improve. One example is our Castellón refinery in Spain. National law requires that we use armed security and provide two days of training a year. Through our own security review, we decided to double the number of training days.

As another example, we assessed potential security-related risks to the human rights of neighbouring communities in Mauritania and Senegal, where we are planning new projects. The findings identified the need to discuss the importance of the Voluntary Principles and BP’s commitment to them with local security forces.

Visit bp.com/vpshr for more information about our progress on security and human rights.
BP and human rights – our progress

2000
BP is a founding member of the UN Global Compact and the Voluntary Principles on Security and Human Rights.

2002
BP sets up the Tangguh Independent Advisory Panel to monitor the impact of our liquefied natural gas project in Indonesia on indigenous people, security and human rights. We also commission the first human rights impact assessment in our industry.

2003
BP establishes the Caspian Development Advisory Panel to provide independent advice on our management of human rights and other issues during construction of the Baku-Tbilisi-Ceyhan pipeline.

2006
BP publishes group-wide guidance on human rights.

2010
BP integrates major project requirements to screen for potential impacts on workforce welfare and to consult with indigenous peoples into our operating management system.

2011
Independent human rights experts review alignment of BP’s policies and practices with the UN Guiding Principles. They highlight that our operating management system is a good foundation and provide recommendations for further improvement.

2012
BP creates a formal governance structure for managing human rights issues and an action plan for aligning our business processes with the UN Guiding Principles.

2013
BP launches its human rights policy and begins training employees and leadership teams.

2014
BP integrates human rights considerations into guidance for our mergers and acquisitions teams to use when assessing opportunities.

2015
BP incorporates human rights clauses into the standard model contracts we use for new agreements with suppliers.

2016
• BP develops a due diligence process to assess the human rights practices of our suppliers.
• BP includes human rights in impact assessment requirements for certain projects.
• BP begins a systematic review of the risk of modern slavery in our businesses and supply chain.

2017
• BP publishes our expectations of suppliers on the way they do business with and for BP, including respect for human rights.
• BP develops guidance and screening tools for businesses to use in assessing modern slavery risk.
• BP delivers additional human rights training specifically on modern slavery.

2000
BP is a founding member of the UN Global Compact and the Voluntary Principles on Security and Human Rights.
How do you measure the value that you bring to communities and countries?

It’s not as easy as measuring barrels of oil, or how many people we employ, or how much we spend on social investment. Putting a value on the contributions we make to vibrant and dynamic societies is harder. For me, the best measure is the reaction of our employees, host governments and the communities themselves.

Peter Mather
Group regional president, Europe and head of country, UK, BP
The energy we produce helps power economic growth and improve the quality of life for millions of people.

We make a significant contribution to societies around the world, providing heat and light for homes, fuel to get people to their destinations and power for industry.

We enable countries, from Brazil to Oman, and from the US to Indonesia, to grow their domestic supplies of energy and boost their energy security.

This, in turn, creates jobs, drives economic development and generates revenue for governments. The value we create can transform communities, even nations.

The value we deliver to society

$245.5bn
Economic value generated by BP

$203.6bn
Suppliers
Sourcing goods and services from around 60,000 companies.

$10.2bn
Employees
Providing jobs for 74,000 people around the world.

$9.9bn
Capital providers
Paying finance costs to our lenders.

$5.8bn
Governments
Contributing to economies through the taxes we pay.

$0.1bn
Communities
Supporting efforts to improve standards of living.

$15.9bn
Economic value retained by BP
China

We support one in every 260 jobs when you count our employees and those of our suppliers.

UK

We employ around 14,000 people and support more than 100,000 jobs across our supply chain in the US.

Egypt

Together with our partners, we produce around 50% of gas consumed in the country.

Azerbaijan

Our programmes have enabled local firms to secure contracts with BP worth in excess of $530 million.

US

We employ around 14,000 people and support more than 100,000 jobs across our supply chain in the US.

Angola

A total of 88% of our workforce in Angola are nationals.

Brazil

Our biofuels sites produce enough renewable energy to power all the homes in a city of 1.3 million people.

India

We are one of the largest foreign investors in India's growing energy sector.

Indonesia

Gas from our Tangguh plant helps generate electricity for local communities, reducing their reliance on diesel.

BP Sustainability Report 2017
Supporting local workers and suppliers

We are committed to creating jobs and growing local businesses in the communities in which we operate.

We try to recruit our workforce from the community or country in which we are based. While some governments require us to do so, we try to do this everywhere we operate because we believe it’s not just good for the local community, it’s good for BP.

And when certain skills are in short supply, such as engineering or technical abilities, we offer training programmes and on-the-job development.

Addressing the skills shortage

In Georgia, BP has been running technical development programmes for local workers for many years, supporting a government priority to address skill shortages.

In 2017, we partnered with the Georgian Technical University to establish a training centre for high-voltage electrical engineering, industrial automation, mechanical engineering and other technical areas. The first group of more than 70 students started in November 2017.

Advancing the local economy

Our enterprise development programme in Azerbaijan helps local companies build their skills so that they meet international standards and improve their competitiveness in the market. Since its inception more than a decade ago, the programme has led to local businesses securing contracts with BP worth more than $530 million.

Promoting supplier diversity

BP operates in a wide variety of communities and we look for opportunities to source goods and services from diverse suppliers.

In the US, we partner with organizations, like the National Minority Supplier Development Council, to provide mentoring and training programmes to businesses so that they can develop their skills and become more competitive when bidding for our contracts. We spent $478 million with more than 200 minority and women’s business enterprises in 2017.

BP’s supplier diversity team has been stewarding our company through the years. From 75 people when we started working with BP in 2003, we now have around 200 employees – with about a quarter of them working on BP projects.

Robert Valdes
President, Valdes Engineering

Nationals employed

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trinidad &amp; Tobago</td>
<td>95%</td>
</tr>
<tr>
<td>Egypt</td>
<td>83%</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>91%</td>
</tr>
<tr>
<td>Oman</td>
<td>70%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>97%</td>
</tr>
<tr>
<td>Angola</td>
<td>88%</td>
</tr>
</tbody>
</table>

48 BP Sustainability Report 2017
I was the first of two Omanis to join the operations team when our Khazzan plant was sanctioned. I got the chance to work with BP teams in the UK and the United Arab Emirates, where I learnt new technical and leadership skills. I went on to help design our Khazzan facilities and now lead a team of 29 people.

Salim Al Kalbani
Operations team leader, BP Oman

Developing a local workforce

BP began producing gas in Oman in 2017 and the Khazzan field will eventually supply around 40% of the country’s daily gas needs.

As well as helping to meet Oman’s growing energy needs, we are providing opportunities for Omani nationals to develop their technical skills. We established a multi-year training programme to do this, which starts with participants learning skills such as mechanical and electrical engineering, before completing assignments in our oil and gas fields to gain practical hands-on experience.

So far, more than 70 Omanis have graduated and are working at the Khazzan field.
Investing in communities

We work with governments, communities and non-governmental organizations to implement social investment programmes that can have a sustainable beneficial impact.

We invest in community projects that align with local needs and our business activities. We consider how these projects support the UN Sustainable Development Goals.

BP’s community spend by region ($ million)

- US and Canada: 29.5
- Sub-Saharan Africa: 20.5
- Middle East and North Africa: 14.2
- Europe: 14.1
- Asia Pacific: 6.5
- South and Central America: 4.7

BP’s community investment by type

Environment

We support biodiversity and conservation programmes, as well as initiatives to advance scientific understanding of species and habitats.

Angola

Since 2010, we have partnered with Agostinho Neto University to study and conserve critically endangered marine turtles. To date, the project has recorded around 23,400 turtles and has helped more than two million hatchlings make their way to the sea.

US

We have supported conservation studies on Alaska’s North Slope for many years. For example, we work with local non-governmental organizations to monitor nesting birds on the tundra to better understand the potential impact of climate change and predators.
Economic development

Our activities contribute to local economic development and we help communities develop entrepreneurial skills to create more sustainable livelihoods.

Trinidad & Tobago

We support the Beyond Borders programme, which provides training to people living in disadvantaged communities in Trinidad. Since 2010, the programme has set up more than 100 community-based organizations and local businesses, creating new jobs in catering, marketing, graphic design and other areas. This has provided life-changing employment opportunities and some communities have even seen a drop in crime.

Turkey

We are equipping women living in rural areas close to the Baku-Tbilisi-Ceyhan pipeline with entrepreneurial skills so they can set up their own businesses, or grow existing ones. We provide training and small grants. This enables them to play an active role in the socio-economic life of their communities. In 2017, more than 250 women participated in training and we supported around 25 start-ups.

Visit bp.com/casestudies for more examples of our social investment programmes.

Value to society

Education

Many of the education programmes that we support encourage young people to consider careers in science, technology, engineering and mathematics (STEM) and we also participate in initiatives to develop the next generation of leaders.

China

We support a one-year scholarship programme at Tsinghua University for future leaders, which focuses on China’s expanding role in the world. More than 200 people from countries such as Brazil, China, the US and Zimbabwe have joined since 2016.

India

We work with local non-governmental organizations to provide STEM education for underprivileged children in Mumbai. Many of these children do not go to school and have limited access to books and resources. Together with Door Step School and Masoom, we hold workshops where children can learn about science and technology through practical curricula. More than 850 children participated in 2017.

Engagement

We want to make art more accessible for audiences and communities. In the UK, we have supported arts and cultural activities for more than 50 years. We have long-term partnerships with the British Museum, the National Portrait Gallery, the Royal Shakespeare Company and the Royal Opera House. We are investing an additional $10 million in these institutions over five years from 2018.
Value to society

Promoting revenue transparency

Transparency helps citizens hold public authorities to account for the way they use funds received through taxes and other agreements.

We support transparency in the flow of revenue from oil and gas activities to governments.

We are a founding member of the Extractive Industries’ Transparency Initiative (EITI), which requires disclosure of payments made to and received by governments in relation to oil, gas and mining activity. In 2017 we supported EITI implementation in a number of countries where we operate, including Iraq and Trinidad & Tobago.

In addition, we disclose information on payments to governments for our upstream activities on a country-by-country and project basis under national reporting regulations, such as those in effect in the UK.

We appreciate the opportunity to engage with EITI as we pursue our work in Mauritania and Senegal. This can make a real difference by bringing citizens’ groups, companies and governments together to build a framework for transparency.

Geraud Moussarie
Head of country, BP Senegal
How do you take into account sustainability factors when you enter new regions?

We need to understand the views of people in the places where we work. This is an ongoing process that starts from the moment we enter a region and continues throughout the life of our operations. We look at multiple factors – environmental, social and political. For me, being transparent, demonstrating mutual benefit and building trust are critical.

Ayana McIntosh-Lee
Vice president, communications and external affairs,
BP Mauritania and Senegal
Managing impacts

Our environmental and social impacts

We work hard to avoid, mitigate and manage our environmental and social impacts over the life of our operations.

How our businesses around the world understand and manage their environmental and social impacts is set out in our operating management system – which underscores the importance of consulting with stakeholders who may be affected by our activities.

Project planning

We identify actions we need to take to manage potential impacts from our activities in areas such as labour rights, land acquisition, local communities and protected areas.

BP is working with Kosmos Energy to develop natural gas resources off the coast of Mauritania and Senegal. Our offshore liquefied natural gas (LNG) facility will supply gas to both domestic and global markets, generating revenues and new energy supplies for the two countries.

As we progress with our work, we’ve been keen to understand the concerns and expectations of the people living there.

Over the course of 2017, we met with more than 2,600 community members in the two countries. We discussed issues ranging from local employment to our ability to respond to an oil spill. These consultations will contribute to an environmental and social impact assessment in 2018.
When it was time to decommission our Miller platform in the North Sea after 15 years in operation, we evaluated how we could use UK suppliers to carry out the work and what opportunities there were to recycle materials.

- About 70% of the engineering and removal work is going to UK suppliers.
- Up to 97% of the materials, the majority of which is steel, will be reused or recycled.

We are also participating in a joint industry research programme, called INSITE, to better understand the long-term effect of manmade structures on the marine environment.

Visit insitenorthsea.org

Richard Heard
Programme director, INSITE

Operations

At our major operating sites, we review performance each year and set local improvement targets. These can include measures on flaring, greenhouse gas emissions and the use of water.

Decommissioning

We consider environmental factors such as the reuse of materials and appropriate disposal when closing down a site.

When we began planning our liquefied natural gas plant in Indonesia in 2002, we set up an independent panel to monitor our progress.

The Tangguh Independent Advisory Panel (TIAP) continues to review our performance in areas such as human rights, security and governance.

Visit bp.com/id for TIAP reports and BP’s responses.

The North Sea accommodates around 1,300 petroleum installations and 1,800 wind turbines. We set up INSITE to help us further our understanding of their effect on the ecosystem. For example, our researchers are studying how marine organisms move from structure to structure. We can then study how removing the structures will affect these colonies.

Richard Heard
Programme director, INSITE
Engaging with communities

We work with local communities in an open and constructive way.

When planning new projects we assess the potential impacts on communities, such as health and safety, resettlement, labour rights, use of water and local livelihoods. This helps to identify early on whether any activities could affect the rights of people living in nearby communities and to find ways to prevent or mitigate those impacts.

We consult with communities so that we can understand their expectations and address concerns. Through this, we hope to resolve potential disagreements, avoiding negative impacts on others and disruption to our activities.

We require our businesses to identify and respond to concerns, as well as record and act on any commitments. In 2017, most of the concerns raised by communities living near our operations were to do with damage to crops, property or other infrastructure.

Focus on Nova Scotia

In Canada, we met with fisheries associations and indigenous communities to discuss our plans for offshore exploration drilling.

They asked questions about the impacts on fisheries and migratory species, such as salmon and eel. Through working with independent marine biologists, we were able to show that any impacts on marine life from our proposed drilling would be limited.
Focus on the West Nile Delta

We consulted the local community in Egypt before beginning work in the West Nile Delta, where much of the population depends on fishing to earn their living.

We held sessions with local people and government officials to get their feedback. In the sessions, we discussed why we needed to establish a safety zone around our operations and actions we could take to mitigate the impacts on the fishermen’s livelihoods.

We had concerns when BP announced it was setting up an exclusion zone around its offshore operations as it is an area where we fish and we depend on that income. But BP listened to our concerns and worked earnestly to come up with solutions – from providing interest-free loans to help us set up new businesses, to hiring us to work on their guard vessels.

Abdou Attia
Local fisherman, West Nile Delta
What are your top environmental issues at a local level?

The climate challenge is one of the most critical issues we face globally, but other more localized environmental concerns are also very important. The communities where we work rely on the land, air, water and biodiversity around them. So we spend a lot of time on the ground identifying the issues and taking action to avoid and reduce our impact.

Tyrone Kalpee
Environmental director, safety and operational risk, BP
We support the conservation of sensitive areas that house our planet’s rich natural and cultural heritage.

In circumstances where our activities occur in places that have cultural significance, are home to threatened or protected species, or have outstanding biological, geographical or social value, we take action to mitigate the potential impact of our work.

International protected areas

Four of our major operations have activities in international protected areas, including two pipelines that pass through World Heritage sites. We evaluate new projects to determine whether planned activities could affect protected areas. If our screening process shows that a proposed project could enter or affect an international protected area, we conduct a detailed risk assessment. We then require executive approval before any physical activities can take place. In 2017, no new project sought permission to enter an international protected area.

Visit bp.com/protectedareas for more information on our sites in and close to protected areas.

Major operating sites in and around international protected areas

Note: A site may exist within or near more than one type of protected area.
We work with conservation organizations, such as The Nature Conservancy and Fauna and Flora International, to understand biodiversity trends, issues and threats.

At our liquefied gas plant in Indonesia, for example, we worked with local ornithologists to successfully relocate endangered black-billed scrubfowls eggs before recent expansion work.

We have an extensive deepwater portfolio and we work to understand how our operations may disturb marine habitats or sensitive areas. We often conduct marine mammal monitoring during our offshore operations to understand any potential impacts, such as those associated with sound, from our activities. To improve the amount and quality of this data we are testing autonomous vehicles fitted with underwater microphones and cameras.

The Amazon basin

BP has plans to operate one exploration block in the Foz do Amazonas basin, 160 kilometres off the coast of Brazil. We carried out baseline studies of this block as part of our environmental impact assessment and oil spill response planning, in partnership with other operators in the area. We undertook water and sediment sampling, monitoring of sea currents, as well as bird, fish and marine mammal surveys.

In 2017, we held sessions with more than 1,500 local stakeholders, including indigenous people, universities, non-governmental organizations, industry and government representatives, in northern Brazil, to discuss the project’s potential environmental and social impact.

Monitoring the impact of seismic surveys in the Caspian Sea

Some of our most recent exploration activities in Azerbaijan took place near the Absheron National Park, an international protected area and key migration area for the endangered Caspian seal.

As part of our work, we conducted a seismic survey to understand the geological structure thousands of feet beneath the seabed. This was within three kilometres of the national park. We met with scientists and regulators to agree the safest way forward.

We avoided peak migration season and had seal experts monitor the area before and during the seismic work.

Prior to the start of each survey, our vessel crew monitored the area and if seals were observed the work was delayed to give them time to move on.

We have since shared our approach with government officials, academics and scientists to improve understanding of seal movements. The baseline data will also inform our plans for any exploration drilling.
Preserving cultural heritage

Our South Caucasus Pipeline Expansion project spans more than 480 kilometres, taking gas from Azerbaijan to the Georgian border with Turkey.

The region is home to some of the world’s most ancient cultures. We uncovered cultural heritage sites, including a medieval settlement, ancient graves and artefacts as part of our pre-construction environmental and social surveys.

In many cases, we were able to avoid these sites by modifying the route of the pipeline. Where this was not possible, the BP team and government archaeologists investigated and excavated the sites before construction began.

The wealth of artefacts and sites discovered is contributing to the broader knowledge of past civilizations.
Water is one of the planet’s most precious resources, which is why we actively manage its use.

We have operations in many different countries and the availability of water in areas where we work can vary greatly. That’s why it’s important to look at local conditions, such as water stress and scarcity, in order to manage our impact.

How we evaluate water risk
Each year we review water risks in our portfolio, considering the local availability, quantity, quality and regulatory requirements.

We estimate that around half of our major operations withdraw fresh water in areas where its availability is considered stressed or scarce. These operations account for 21% of our total freshwater withdrawals.

In our gas operations in Oman – an area where the availability of fresh water is extremely scarce – we use saline water from a local underground aquifer. We desalinate the water and use it for drilling and hydraulic fracturing, as well as for washing and other domestic uses. We continue to look for ways in which we can reduce our demand, such as reusing treated wastewater.

In 2017, we saw increases in our freshwater withdrawal, consumption and wastewater volumes primarily due to increased production in our upstream operations and refineries.

Visit bp.com/hsechartingtool for water performance data.
Water use

Water is required for drilling, hydraulic fracturing and other upstream production processes, and it is an essential component in refining, petrochemical and biofuels production.

We use non-fresh water, such as seawater, in our oil and gas production and treated wastewater at some of our refineries.

Freshwater consumption
The volume of fresh water that is not returned to the environment is considerably lower than the volume withdrawn.

Freshwater withdrawal
We withdraw fresh water from rivers, lakes and aquifers.

Two thirds of freshwater withdrawn is returned to the environment.

Wastewater and produced water
In our upstream operations, we generate produced water, which comes to the surface during oil and gas production.

In many of our operations, particularly in our downstream business, we manage wastewater from the site.

Management of wastewater and produced water
• Reinjected back into the oil and gas reservoir.
• Treated to applicable regulatory standards and returned to rivers, lakes and the sea.
• Disposed of through other permitted means.

For example, we are seeing the development of new regulations in countries such as China and Trinidad & Tobago.
We monitor our air emissions and put measures in place to reduce the potential impact of our activities on the surrounding community. As one example, in our unconventional gas operations in the US, we use lower sulphur fuels in the engines of our drilling rigs and hydraulic stimulation equipment which reduces sulphur dioxide emissions.

And in shipping, we are introducing six liquefied natural gas (LNG) carriers with energy efficiency enhancements. They are designed to use approximately 25% less fuel and emit less nitrogen oxides than our older LNG ships.

Air emissions

Tackling local air quality is increasingly important to communities, governments and other stakeholders, driven mainly by public health concerns.
Local impacts of unconventional gas

We remain focused on producing unconventional resources in a safe and responsible way.

Almost half of our current gas portfolio comes from unconventional resources including shale gas, tight gas and coalbed methane. We have unconventional gas operations in five US states and in Oman, where we began producing gas in 2017.

Water use

The volume of freshwater withdrawn by our unconventional gas operations was 2.1 million m³ in 2017, which represents 0.8% of the group total. We look at ways to reduce freshwater use and support industry efforts to identify new water treatment technologies. For example, we have invested in a water company that manufactures desalination management systems.

Water contamination

We design, operate and decommission our wells in a way that reduces the risk of water contamination. We install multiple layers of steel into each well and cement above and below any freshwater aquifers. We then test the integrity of each well before we begin the fracturing process and again at completion.

Emissions

We work to reduce our greenhouse gas and other emissions. As an example, in Oman our central processing facility reduces the need for processing equipment at individual well sites, which can be additional sources of methane emissions in gas production.
Chemicals
The water and sand that make up 99.5% of the injection material used in hydraulic fracturing are mixed with chemicals that help reduce friction and bacterial growth in the well. We list the chemicals that we use at each site. We also submit data on their use in our hydraulically fractured wells in the US, to the extent allowed by our suppliers, who own the chemical formulas, at fracfocus.org, or other state-designated websites.

Earth tremors
Hydraulic fracturing creates very small earth tremors that are rarely felt at the surface. Before we start work, we assess the likelihood of our operations causing such activity. For example, we identify natural faults in the rock. This analysis informs our development plans for drilling and hydraulic fracturing activity and we design our operations to mitigate this risk.

Hydraulic fracturing process
Fracturing fluid is pumped into the well head
Recovered water is stored in lined pits and/or tanks
Water tankers
Storage tanks
Well is isolated with pipe and cement
Water table
5,000-10,000ft below the water table
Gas flows along well from fractures
Shale
Fissure
What is BP doing to advance diversity in the workplace?

We start early by working with schools and universities to encourage more females and minorities into science, technology, engineering and maths subjects. Then it’s about having the right systems in place to promote diversity in our employment practices. Once on board, we need to make sure every employee feels included and can thrive, whatever their gender, sexual orientation or ethnicity.

Lucy Knight
Global head of diversity and inclusion, BP
Our people and ethics

Addressing the gender balance

Our goal is for women to represent at least 25% of our group leaders – our most senior managers – by 2020.

The gender balance across BP as a whole is steadily improving, with women representing 34% of BP’s population, compared with 33% in 2016 and 32% the year before. We’re working to improve these numbers further by, for example, developing mentoring, sponsorship and coaching programmes to help more women advance. That said, we still have work to do at the executive and senior levels.

We pay equal pay for like or equal work. We published 2017 data on our gender pay gap in the UK, which shows a difference in overall average pay between male and female employees.

This gap is largely due to a higher proportion of men in senior levels of the organization and specific roles, such as offshore work, that attract higher pay, bonuses or allowances. We are taking action to address this disparity.

Visit [bp.com/ukgenderpaygap](http://bp.com/ukgenderpaygap)

Many of our jobs rely on science, technology, engineering and maths (STEM) skills, which historically have attracted more men. To understand why some students – girls and boys – don’t choose STEM subjects, we developed a five-year programme with King’s College London, University College London and the Science Museum. The research informs our work with schools, from employee volunteering to producing STEM-related teaching resources.

---

### BP employees by gender (%)

<table>
<thead>
<tr>
<th>All staff</th>
<th>Graduate hires</th>
<th>Experienced hires</th>
<th>Group leaders</th>
<th>Board of directors</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>45</td>
<td>42</td>
<td>21</td>
<td>23</td>
</tr>
<tr>
<td>66</td>
<td>55</td>
<td>58</td>
<td>79</td>
<td>77</td>
</tr>
</tbody>
</table>

We participate in industry mentoring programmes to advance gender diversity.

We work closely with universities to attract women into scientific and engineering roles.

We support programmes that enable women to resume their careers after a break.

We are on track for women to represent a quarter of our most senior managers by 2020.

Our goal is for women to represent 30% of board membership by 2020.
Increasing women’s representation in Brazil

Since introducing our gender equality programme in Brazil in 2013, the number of women working in operational roles in our biofuels business has more than doubled.

The majority of the jobs at our mills involve administrative, agricultural, industrial and maintenance activities, but back in 2013 only 7.5% of them were filled by women. We held forums to find out what challenges local women faced in joining the workforce.

We learned that access to good quality childcare is a particular problem. So we trained more than 40 people living in communities around our largest mill to help them become teachers and childcare assistants.

Lack of experience was another issue, so we introduced a programme to train women as tractor drivers. To date, we have hired 50 women drivers as part of the programme.

Having the right policies in place

Our diversity and inclusion policy promotes diversity in our job shortlists and on our interview panels. We provide agile working arrangements where possible to support the flexibility that employees need to manage their work/life balance. We offer support to those returning to work after an extended period of leave.

Industry principles

We are working with our peers to close the gender gap in our industry. As part of the World Economic Forum’s oil and gas group, we jointly agreed to a set of principles to promote the development of women’s careers.

To attract and retain the best men and women, we need to put great policies into practice for all. As leaders we must show that these policies work so we create a culture that people want to be part of.

Louise Kingham
Chief executive, The Energy Institute and board member, POWERful Women
Creating an inclusive and engaging workplace

Our business is built on the passion and talent of our people, which is why we look to attract, motivate and retain the very best that the world has to offer.

We believe that to succeed, we must create an environment in which everyone is included and treated with respect and dignity. To promote an inclusive culture, we provide leadership training and support employee-run advocacy groups in areas such as gender, sexual orientation, parenting, disability and ethnicity. As well as bringing employees together, these groups support BP’s recruitment programmes and provide feedback on the potential impact of policy changes. Each group is sponsored by a senior executive.

Human Rights Campaign, the lesbian, gay, bisexual, transgender and queer rights organization, named BP among its top scoring companies in its Corporate Equality Index in 2018.

Diversity of people brings diversity of thought, while an inclusive culture allows your best talent to flourish. Together, diversity and inclusion are essential for sustainable, profitable growth.

Suki Sandhu
CEO, EMpower and OUTstanding

Attract and retain

We were pleased to be named the UK’s leading recruiter in the oil and gas sector in The Times newspaper’s Graduate Employer rankings in 2017.

A total of 314 graduates joined BP in 2017, up from 231 graduates in 2016.

We invest in our employees’ development – with an average spend of around $3,300 per person. This includes online and classroom-based courses and resources, supported by a wide range of on-the-job learning and mentoring programmes.

Engage

We survey our employees to gauge how they feel about BP. The overall employee engagement score in 2017 was 73% – up from two years ago, where we saw a decline that coincided with the uncertainties of a low oil price environment.

Pride in working for BP increased to 75% in 2017, compared with 73% in 2016 and 68% in 2015.

We are considering how to address employee dissatisfaction with opportunities to develop their skills – which had lower scores in 2017.

Reward

We reward our employees based on what they deliver and how they demonstrate behaviour that reflects our values.

All employees must set priorities on their contribution to safety and creating value.
Conducting our business ethically

Our code of conduct is based on our values and sets clear expectations for how we work at BP.

Our code applies to all employees and members of the board and we expect and encourage our contractors and their employees to act in a way that is consistent with our code. We take appropriate action if those expectations are not met.

Each year, our employees and board members certify that they understand the code, have fulfilled their responsibilities and reported any breaches. Our code specifically prohibits any form of abuse or harassment. We train our employees on applying the code in their daily work. This includes training on harassment awareness and prevention.

Speaking up

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

To this end, we encourage employees to discuss their questions or concerns with their managers, supporting teams, works councils (where relevant) or via BP’s confidential helpline, OpenTalk. A total of 817 concerns or enquiries were received through OpenTalk in 2017, down from the previous two years. The concerns most commonly raised are about fair treatment of people, creating a respectful, harassment-free workplace and protecting privacy and confidentiality.

BP has zero tolerance for retaliation against anyone who seeks advice, raises a concern, reports misconduct or participates in an investigation. The consequences for misconduct or retaliation range from coaching and performance management through to dismissal.

Our businesses dismissed 70 employees for non-conformance with our code of conduct or unethical behaviour in 2017. This excludes dismissals of staff employed at our retail service stations.

Promoting ethical behaviour with our suppliers

We hold sessions with suppliers on our code of conduct. For example, in 2017, we held an event in Azerbaijan and invited companies who we thought would benefit from extra guidance, such as those working in multiple countries or who use sub-contractors. Around 50 suppliers participated. We discussed possible scenarios, including examples of breaches, and shared lessons learned.

Visit bp.com/codeofconduct to read our code.
Anti-bribery and corruption

We operate in some of the world’s highest risk countries from an anti-bribery and corruption perspective. Our code of conduct explicitly prohibits engaging in bribery or corruption in any form. Our group-wide anti-bribery and corruption policy and procedures include measures and guidance to assess risks, understand relevant laws and report concerns. We provide training to employees appropriate to the nature or location of their role.

We assess any exposure to bribery and corruption risk when working with suppliers and business partners. Where appropriate, we put in place a risk mitigation plan or we reject them if we conclude that the risks are too high.

We also conduct anti-bribery compliance audits on selected suppliers when contracts are in place. For example, our Upstream business conducts audits on a number of suppliers in higher risk regions to assess their compliance with our anti-bribery and corruption contractual requirements. We issued a total of 36 audit reports in 2017. We take corrective action with suppliers and business partners who fail to meet our expectations, which may include terminating contracts.

12,500 employees completed anti-bribery and corruption training in 2017.

Lobbying and political donations

We prohibit the use of BP funds or resources to support any political candidate or party. We recognize the rights of our employees to participate in the political process and these rights are governed by the applicable laws in the countries where we operate.

We are members of multiple industry associations that offer opportunities to share best practices and collaborate on issues of importance to our sector. Their positions don’t always reflect our own – given that they reflect a compromise of the assorted views of the membership. We feel it is important to participate to make our views known.
What role does your board play in leading BP towards a sustainable future?

Our role, working closely with the executive team, is to provide strategic direction, oversight and assurance. And, the level of access we’re given into the operational side is extensive. On site visits, we look for ourselves and ask questions, and then we engage with the executive team on what this may or may not mean for the objectives we’ve set.

Alan Boeckmann
Chair, safety, ethics and environment assurance committee and non-executive director, BP
We are committed to upholding the highest standards in all we do, including operating in a safe and sustainable way. Our board is responsible for the overall conduct of the group’s business.

BP’s board of directors reviews and monitors performance against our long-term strategy and confirms that the processes for identifying and managing key risks – both financial and non-financial – are in place.

With global business experience, and backgrounds as diverse as academia and the US Navy, our non-executive directors bring wide-ranging and invaluable expertise to the table.

The safety, ethics and environment assurance committee (SEEAC), one of our six board committees, looks at the processes that BP’s executive team use to identify and mitigate operational and non-financial risk.

Field visits
Members of the board visit BP operations giving them first-hand experience of our assets and the chance to observe and question operating teams. In 2017 they visited our operations in Hungary, Norway, the UK and the US.

Cherry Point refinery, US
Board members met with site leaders and discussed safety, risk and operating culture at the refinery. With almost half of the workforce made up of contractors, they focused on how the site makes everyone aware of BP’s principles and safety mindset. They also heard from teams about the refinery’s community and environmental programme.

Glen Lyon, UK
The Glen Lyon floating production vessel in the North Sea processes and stores oil and gas from the west of Shetland. Board members discussed the safety measures taken by the vessel before and after production started in 2017, such as the use of our operating management system to check the integrity and flow of the pipelines.

Our board and its committees in action – some 2017 highlights

- **Low carbon future**
  Discussion on BP’s strategy including the transition to a low carbon economy.

- **Cyber security**
  Multiple briefings to the board and two of its committees on cyber security risks.

- **Human rights**
  Review of how BP is managing modern slavery risks.

- **Diversity**
  Review of board composition and diversity throughout BP.
Executive accountability

The executive team reviews BP’s strategy with the board on a periodic basis.

The executive team worked with the board in 2017 to understand the implications of the transition to a low carbon economy. They reviewed our Energy Outlook, which looks at energy trends over the next two decades, and discussed the strategic direction of the group.

Supported by dedicated committees, our executive team oversees BP’s performance in a wide range of areas.

• The group operations risk committee reviews progress on carbon management, safety performance and potential modern slavery risks.

• The group people committee looks at employee issues, including capability, reward and diversity.

• The group ethics and compliance committee reviews breaches against our code of conduct.

Executive pay is linked to performance with safety, reliable operations and financial performance accounting for one-third of executive bonuses – as they do for all employees. Tier 1 process safety events and recordable injury frequency are the two safety performance measures for executive reward.

Progress against our strategic priorities accounts for 20% of the longer-term share awards for our group chief executive and chief financial officer. Many performance measures, including those related to gas, renewables, venturing and renewables trading, contribute to this.

Visit bp.com/annualreport for more information on governance and remuneration.

Our executive team in action – some 2017 highlights

- Low carbon future
  Assessment of BP’s low carbon ambitions.

- Cyber security
  Participated in an exercise to test response to a cyber security incident.

- Human rights
  Review of BP’s plans to manage potential risks of modern slavery.

- Diversity
  Focus on gender pay gap reporting and strategy for the way forward.
Operating businesses

Our operating businesses are responsible for identifying and managing risks and our operating management system (OMS) helps them do this in a consistent and rigorous way.

Our 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.

We update the OMS from time to time to reflect BP’s priorities and experience. New guidance assesses socio-economic factors related to unplanned events, such as an oil spill or a community opposition. We consider the effects on livelihoods, cultural heritage, community disruption and workforce welfare.

Setting expectations of our partners
BP often partners with other companies in our business activities – sometimes we are the operator, and sometimes our partner manages the operations.

In joint ventures where we are the operator, our OMS, code of conduct and other policies apply. We aim to report on aspects of our business where we are the operator, as we directly manage the performance of these operations.

Where we are not the operator, our OMS is available as a reference point for BP businesses when engaging with operators and co-venturers. We have a group framework to assess and manage BP’s exposure related to safety, operational, and bribery and corruption risk from our participation in these types of ventures.

We monitor performance and how risk is managed in our joint ventures, whether we are the operator or not.

43% of our upstream production in 2017 was from joint ventures where BP is not the operator.

Our operating businesses in action – some 2017 highlights

Low carbon future
Actioned sustainable GHG reductions totalling 0.5 million tonnes.

Cyber security
Multiple exercises conducted to test recovery and response capability.

Human rights
40+ training sessions held for around 1,000 employees on the risk of modern slavery.

Diversity
45% of graduate hires and 42% of experienced hires were women.
We engage with many people around the world – as an energy provider to millions, as an employer of many thousands and as a company that helps boost local economies through jobs and revenue.

Communities
We engage with local communities through public consultations, as well as more ad hoc meetings. These relationships are important for all our activities, but particularly for major new projects, where our presence may bring about changes, such as job opportunities but also impacts on local resources and infrastructure.

Employees
Through websites, town halls and other communications channels, we keep our employees informed about BP’s strategy, performance and external context. And, employees at many BP sites around the world make their views known through union involvement.

Governments
We work with governments on a range of issues from carbon pricing to environmental permitting to community investment.

Industry associations
We work with our peers to address complex energy challenges and to share best practices. For example, we are a member of the Oil and Gas Climate Initiative, the American Petroleum Institute and IPIECA, the global oil and gas association for environmental and social issues.

Non-governmental organizations
We interact with local and international NGOs to discuss issues as diverse as climate change and energy policy, human rights, revenue transparency and operating in sensitive areas.

Shareholders and analysts
We have an ongoing dialogue with shareholders and analysts through our programme of roadshows, one-to-one meetings, webcasts and our annual general meeting. We keep them informed of our strategy and plans from both financial and non-financial perspectives.
We include issues in our Sustainability Report if we assess them as being of high importance in terms of business impact and stakeholder concern.

Subject matter experts from across BP complete the initial prioritization of issues. Then, our assurance provider Ernst & Young and our board committee responsible for sustainability-related issues validate these findings.

Our material issues in 2017

<table>
<thead>
<tr>
<th>Climate change and the energy transition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Our commitment to advance a low carbon future</td>
<td>6</td>
</tr>
<tr>
<td>Greenhouse gas emissions</td>
<td>14</td>
</tr>
<tr>
<td>Renewable energy</td>
<td>18</td>
</tr>
<tr>
<td>Innovation and venturing</td>
<td>22</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Safety</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Preventing accidents</td>
<td>32</td>
</tr>
<tr>
<td>Personal safety</td>
<td>34</td>
</tr>
<tr>
<td>Cyber security and security</td>
<td>34</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Human rights</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Worker welfare</td>
<td>39</td>
</tr>
<tr>
<td>Rights of people in communities</td>
<td>43</td>
</tr>
<tr>
<td>Security and human rights</td>
<td>43</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Society</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Social contribution</td>
<td>46</td>
</tr>
<tr>
<td>Revenue transparency</td>
<td>52</td>
</tr>
<tr>
<td>Community engagement</td>
<td>56</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitive areas</td>
<td>59</td>
</tr>
<tr>
<td>Water</td>
<td>62</td>
</tr>
<tr>
<td>Air quality</td>
<td>63</td>
</tr>
<tr>
<td>Hydraulic fracturing impacts</td>
<td>64</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>People and ethics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Skills and capability</td>
<td>69</td>
</tr>
<tr>
<td>Diversity and inclusion</td>
<td>69</td>
</tr>
<tr>
<td>Business ethics</td>
<td>70</td>
</tr>
<tr>
<td>Anti-bribery and corruption</td>
<td>71</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Governance and risk</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance of sustainability issues</td>
<td>73</td>
</tr>
<tr>
<td>Risk management</td>
<td>75</td>
</tr>
</tbody>
</table>

In preparing this report, we met with around 100 different organizations, from investors to NGOs to business partners, to hear what issues matter most to our stakeholders.

We also held sessions with employees to find out how they use our report and what they would like us to cover.
We aim to shape our reporting around the issues that are material to our stakeholders. External frameworks often provide helpful insight in how to do this.

UN Sustainable Development Goals

The UN SDGs aim to overcome global challenges such as poverty, hunger, inequality and climate change. Our core business of delivering energy to the world contributes directly to goals 7, 8 and 13.

Ensure access to affordable, reliable, sustainable and modern energy for all.

Advancing the energy transition 1
Powering economic growth 46

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

Keeping people safe 34
Labour rights 39
Value to society 45
Our people and ethics 66

Take urgent action to combat climate change and its impacts.

Advancing the energy transition 1

The way we operate supports the implementation of many of the other goals.

Ensure availability and sustainable management of water and sanitation for all.

Water 62

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

Our commitment to advance a low carbon future 6
Investing in low carbon ventures and start-ups 22
Advanced fuels, lubricants and petrochemicals 26
Value to society 45

Ensure sustainable consumption and production patterns.

Limiting emissions 13
Tackling methane 15
Advanced fuels, lubricants and petrochemicals 26
Carbon capture, use and storage 30

Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

Our environmental and social impacts 54
Biodiversity 60
Water 62
Sensitive areas 59
Biodiversity 60
Task Force on Climate-related Financial Disclosures (TCFD)

The Financial Stability Board established the TCFD with the aim of improving disclosure of climate-related risks and opportunities. We support transparency in this area, as well as the need to improve the quality and consistency of these disclosures. Our reporting provides information relevant to each of the four TCFD recommendations and will develop over time.

<table>
<thead>
<tr>
<th>Governance</th>
<th>Annual Report</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sustainability Report</td>
<td>73</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Annual Report</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sustainability Report</td>
<td>4-5</td>
</tr>
<tr>
<td></td>
<td>Energy Outlook</td>
<td>3-5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Risk management</th>
<th>Annual Report</th>
<th>55</th>
</tr>
</thead>
</table>

| Metrics and targets | Sustainability Report | 6,14 |

Industry guidance

We use reporting guidance from IPIECA, the industry association for environmental and social issues. It combines the subject matter expertise of companies with the specialist knowledge of stakeholders engaged with the sector. We adhere to their climate reporting framework, which helps facilitate disclosure of climate-related risks and greenhouse gas emissions performance data relevant to our industry.

International reporting standards

We report in accordance with the Global Reporting Initiative’s G4 core guidelines and the UN Global Compact’s 10 principles on human rights, labour, environment and anti-corruption.

Visit [bp.com/reportingstandards](http://bp.com/reportingstandards)
### Safety

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatalities – employees</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Fatalities – contractors</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Day away from work cases – workforce</td>
<td>130</td>
<td>145</td>
<td>108</td>
<td>94</td>
<td>97</td>
</tr>
<tr>
<td>Day away from work case frequencyb (DAFWCF) – workforce</td>
<td>0.070</td>
<td>0.081</td>
<td>0.061</td>
<td>0.051</td>
<td>0.055</td>
</tr>
<tr>
<td>Recordable injuries – workforce</td>
<td>578</td>
<td>547</td>
<td>428</td>
<td>385</td>
<td>384</td>
</tr>
<tr>
<td>Recordable injury frequencyb (RIF) – workforce</td>
<td>0.31</td>
<td>0.31</td>
<td>0.24</td>
<td>0.21</td>
<td>0.22</td>
</tr>
<tr>
<td>Tier 1 process safety events (number)</td>
<td>20</td>
<td>28</td>
<td>20</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>Tier 2 process safety events (number)</td>
<td>110</td>
<td>95</td>
<td>83</td>
<td>84</td>
<td>61</td>
</tr>
<tr>
<td>Loss of primary containment (number)</td>
<td>256</td>
<td>214</td>
<td>202</td>
<td>200</td>
<td>205</td>
</tr>
<tr>
<td>Oil spills – number (&gt; one barrel)</td>
<td>185</td>
<td>156</td>
<td>146</td>
<td>149</td>
<td>139</td>
</tr>
<tr>
<td>Oil spills contained</td>
<td>111</td>
<td>93</td>
<td>91</td>
<td>91</td>
<td>81</td>
</tr>
<tr>
<td>Oil spills reaching land and water</td>
<td>74</td>
<td>63</td>
<td>55</td>
<td>58</td>
<td>58</td>
</tr>
<tr>
<td>Oil spills – volume (million litres)</td>
<td>0.7</td>
<td>0.4</td>
<td>0.4</td>
<td>0.7</td>
<td>0.9</td>
</tr>
<tr>
<td>Oil unrecovered (million litres)</td>
<td>0.3</td>
<td>0.2</td>
<td>0.1</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Severe vehicle accident rate (per million kilometres driven)</td>
<td>0.12</td>
<td>0.13</td>
<td>0.11</td>
<td>0.05</td>
<td>0.03</td>
</tr>
<tr>
<td>Total vehicle accident rate (per million kilometres driven)</td>
<td>1.20</td>
<td>1.18</td>
<td>1.08</td>
<td>1.04</td>
<td>1.08</td>
</tr>
</tbody>
</table>

### Greenhouse gas emissions

**Operational control**

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct greenhouse gas (GHG) (Mte CO₂ equivalent (CO₂e))</td>
<td>–</td>
<td>54.1</td>
<td>51.2</td>
<td>51.4</td>
<td>50.5</td>
</tr>
<tr>
<td>Direct carbon dioxide (CO₂) (million tonnes (Mte))</td>
<td>–</td>
<td>51.6</td>
<td>48.5</td>
<td>48.4</td>
<td>47.8</td>
</tr>
<tr>
<td>Direct methane (Mte)</td>
<td>–</td>
<td>0.12</td>
<td>0.11</td>
<td>0.12</td>
<td>0.11</td>
</tr>
<tr>
<td>Methane intensity (%)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Sustainable GHG emissions reductions (Mte CO₂e)</td>
<td>–</td>
<td>0.1</td>
<td>0.2</td>
<td>0.7</td>
<td>0.5</td>
</tr>
<tr>
<td>Indirect emissions (MteCO₂e)</td>
<td>–</td>
<td>7.5</td>
<td>7.0</td>
<td>6.2</td>
<td>6.1</td>
</tr>
<tr>
<td>Flaring (upstream) (thousand tonnes of hydrocarbons)</td>
<td>2,028</td>
<td>2,188</td>
<td>1,863</td>
<td>1,896</td>
<td>1,987</td>
</tr>
</tbody>
</table>

**Equity**

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct greenhouse gas (GHG) (Mte CO₂ equivalent (CO₂e))</td>
<td>50.3</td>
<td>48.7</td>
<td>49.0</td>
<td>50.1</td>
<td>49.4</td>
</tr>
<tr>
<td>Direct carbon dioxide (CO₂) (million tonnes (Mte))</td>
<td>47.0</td>
<td>45.5</td>
<td>45.1</td>
<td>46.1</td>
<td>45.8</td>
</tr>
<tr>
<td>Direct methane (Mte)</td>
<td>0.16</td>
<td>0.15</td>
<td>0.16</td>
<td>0.16</td>
<td>0.15</td>
</tr>
<tr>
<td>Sustainable GHG emissions reductions (Mte CO₂e)</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td>Greenhouse gas intensity (TeCO₂ equivalent/unit)</td>
<td>30.1</td>
<td>32</td>
<td>32.7</td>
<td>34.7</td>
<td>30.4</td>
</tr>
<tr>
<td>Upstream (per thousand barrels of oil equivalent)</td>
<td>995</td>
<td>978</td>
<td>944</td>
<td>951</td>
<td>923</td>
</tr>
<tr>
<td>Refining (per utilized equivalent distillation capacity)</td>
<td>283</td>
<td>291</td>
<td>290</td>
<td>287</td>
<td>304</td>
</tr>
<tr>
<td>Petrochemicals (per thousand tonnes)</td>
<td>6.7</td>
<td>6.8</td>
<td>6.9</td>
<td>6.2</td>
<td>6.8</td>
</tr>
<tr>
<td>Indirect emissions (MteCO₂e)</td>
<td>422</td>
<td>406</td>
<td>402</td>
<td>395</td>
<td>412</td>
</tr>
<tr>
<td>Carbon dioxide avoided through our renewables business (MteCO₂e)</td>
<td>2.9</td>
<td>3.2</td>
<td>3.3</td>
<td>3.1</td>
<td>2.9</td>
</tr>
</tbody>
</table>
**Value to society**

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits to employees – including wages, salaries, share-based payments, benefits and pensions ($ million)</td>
<td>13,654</td>
<td>13,936</td>
<td>12,928</td>
<td>11,233</td>
<td><strong>10,204</strong></td>
</tr>
<tr>
<td>Taxes to governments – comprising income taxes and production taxes paid ($ million)</td>
<td>13,904</td>
<td>7,980</td>
<td>3,516</td>
<td>2,174</td>
<td><strong>5,797</strong></td>
</tr>
<tr>
<td>Total dividends distributed to BP shareholders ($ million)</td>
<td>6,911</td>
<td>7,168</td>
<td>7,301</td>
<td>7,469</td>
<td><strong>7,867</strong></td>
</tr>
<tr>
<td>Contribution to communities ($ million)</td>
<td>103.8</td>
<td>85.0</td>
<td>67.2</td>
<td>61.1</td>
<td><strong>89.5</strong></td>
</tr>
</tbody>
</table>

**Environment**

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshwater withdrawal (million m³)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td>289</td>
<td>280</td>
<td>285</td>
<td>257</td>
<td><strong>276</strong></td>
</tr>
<tr>
<td>Upstream</td>
<td>10.3</td>
<td>7.6</td>
<td>6.8</td>
<td>5.7</td>
<td><strong>6.4</strong></td>
</tr>
<tr>
<td>Downstream</td>
<td>271</td>
<td>263</td>
<td>264</td>
<td>239</td>
<td><strong>259</strong></td>
</tr>
<tr>
<td>Other businesses and corporate</td>
<td>7.9</td>
<td>9.9</td>
<td>13.5</td>
<td>12.2</td>
<td><strong>10</strong></td>
</tr>
<tr>
<td>Freshwater consumption (million m³)</td>
<td>106</td>
<td>93</td>
<td>92</td>
<td>87</td>
<td><strong>91</strong></td>
</tr>
<tr>
<td>Percentage of withdrawal</td>
<td>37</td>
<td>33</td>
<td>32</td>
<td>34</td>
<td><strong>33</strong></td>
</tr>
<tr>
<td>Water consumption – group intensity (tonnes water/tonnes production)</td>
<td>–</td>
<td>0.37</td>
<td>0.38</td>
<td>0.36</td>
<td><strong>0.38</strong></td>
</tr>
<tr>
<td>Discharges to water – Upstream</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mass of produced water managed per unit mass of production</td>
<td>–</td>
<td>0.7</td>
<td>0.6</td>
<td>0.7</td>
<td><strong>0.7</strong></td>
</tr>
<tr>
<td>Discharges to water – Refining and chemicals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wastewater treatment measured as chemical oxygen demand (mg/l)</td>
<td>46</td>
<td>52</td>
<td>40</td>
<td>49</td>
<td><strong>41</strong></td>
</tr>
<tr>
<td>Air emissions – nitrogen oxides (thousand tonnes)</td>
<td>129</td>
<td>129</td>
<td>123</td>
<td>125</td>
<td><strong>122</strong></td>
</tr>
<tr>
<td>Air emissions – sulphur oxides (thousand tonnes)</td>
<td>41</td>
<td>39</td>
<td>36</td>
<td>36</td>
<td><strong>35</strong></td>
</tr>
<tr>
<td>Air emissions – non-methane hydrocarbons (thousand tonnes)</td>
<td>102</td>
<td>99</td>
<td>94</td>
<td>91</td>
<td><strong>87</strong></td>
</tr>
<tr>
<td>Environmental expenditure ($ million)</td>
<td>4,288</td>
<td>4,024</td>
<td>8,017</td>
<td>536</td>
<td><strong>971</strong></td>
</tr>
<tr>
<td>Environmental and safety fines ($ million)</td>
<td>2.5</td>
<td>1.0</td>
<td>0.6</td>
<td>15.0</td>
<td><strong>3.6</strong></td>
</tr>
</tbody>
</table>

---

* This represents reported incidents occurring within BP’s operational HSSE reporting boundary. That boundary includes BP’s own operated facilities and certain other locations or situations.
* DAFWCF and RIF are the annual frequency per 200,000 hours worked.
* 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. Tier 2 events are those of lesser consequence.
* Loss of primary containment is an unplanned or uncontrolled release of oil, gas or other hazardous materials from a tank, vessel, pipe, truck, railcar or other equipment used for storage, separation, processing or transfer. Historical and current data for the LOPC metric was restated in 2017 to exclude incidents where there is a safe release of gas to the atmosphere from our US Lower 48 operations, from a hung dump valve in a remote location.
* Oil spills are defined as any liquid hydrocarbon release of more than, or equal to, one barrel (159 litres, equivalent to 42 US gallons).
* The 2016 and 2017 figures are based on our new definition which aligns with industry practice.
* Comprises 100% of emissions from activities that are operated by BP. Data for emissions on an operational control basis was not reported in 2013.
* This includes the methane emissions from our operations where gas goes to market as a percentage of that gas – accounting for more than 90% of methane emissions from our operated oil and gas assets. We do not include methane emissions that result from gas that is only reinjected, recycled or associated with assets where BP does not produce the gas. Data was not reported prior to 2016.
* Previously referred to as real sustainable reductions. This measure reflects actions taken by our businesses that reduce their GHG emissions. See page 13.
* Indirect emissions are those associated with the purchase of electricity, heat, steam or cooling into our operations.
* We report the total hydrocarbons flared from our upstream operations.
* Comprises our share of BP’s consolidated entities and equity accounted entities, other than BP’s share of Rosneft.
* Based on BP’s total reported production of natural gas, natural gas liquids and refinery throughputs.
* Based on BP’s total ethanol production and wind generating capacity. The 2017 figure decreased primarily due to the divestment of two wind farms and lower wind power generation overall at our sites in the US.
* This includes dividends paid in cash and scrip dividends.
* Water consumption intensity data and mass of produced water were not reported in 2013.
Our people and culture

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of employees – group</td>
<td>83,900</td>
<td>84,500</td>
<td>79,800</td>
<td>74,500</td>
<td>74,000</td>
</tr>
<tr>
<td>Number of employees – group leadership</td>
<td>530</td>
<td>501</td>
<td>431</td>
<td>394</td>
<td>394</td>
</tr>
<tr>
<td>Women in group leadership (%)</td>
<td>18</td>
<td>18</td>
<td>19</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>Women at management level (%)</td>
<td>27</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>People from racial minorities in UK and US group leadership (%)</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>People from beyond the UK and US in group leadership (%)</td>
<td>21</td>
<td>21</td>
<td>21</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>Employee engagement (%)</td>
<td>73</td>
<td>73</td>
<td>71</td>
<td>73</td>
<td>73</td>
</tr>
<tr>
<td>Employee turnover (%)</td>
<td>15</td>
<td>12</td>
<td>16</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>OpenTalk cases v</td>
<td>1,121</td>
<td>1,114</td>
<td>1,158</td>
<td>956</td>
<td>817</td>
</tr>
<tr>
<td>Dismissals for non-compliance and unethical behaviour v</td>
<td>113</td>
<td>157</td>
<td>132</td>
<td>109</td>
<td>70</td>
</tr>
</tbody>
</table>

\(^{(1)}\) Includes employees who are group leaders, senior level leaders or in other management positions.

\(^{(2)}\) The 2013-16 figures have been restated as our calculation now divides the number of UK and US racial minorities by the total population of these nationalities, instead of the total number of group leaders.

\(^{(3)}\) Figures for 2013-16 have been amended.

\(^{(4)}\) These figures relate to non-retail employees only. In 2017 voluntary turnover (resignations and retirements) was 4%.

\(^{(5)}\) Any employee, contractor or other third party can contact our confidential helpline, OpenTalk.

\(^{(6)}\) Excludes dismissals of staff employed at our retail sites.

Stakeholders, materiality and data

Visit bp.com/hsechartingtool to filter and analyse our health, safety and environmental data.
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 2017 (‘the Report’).

Respective responsibilities
BP management is responsible for the collection and presentation of the information within the Report. BP management is 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 organization. Any reliance any such third party may place on the Report is entirely at its own risk.

What we did to form our conclusions
Our assurance engagement has been planned and performed in accordance with ISAE3000 Revised.1

The Report has been evaluated against the following criteria:

- Whether the Report covers the key sustainability issues relevant to BP in 2017 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 organization and test the coverage of topics within the Report.

3. Carried out the following activities to review HSE data samples and processes:
   a. Reviewed disaggregated HSE data reported by a sample of 27 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. Our work did not include an assessment of the data reported under the Advancing Low Carbon accreditation programme, as presented on page 9 of the Report.

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 that 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 BP’s share of Rosneft in relation to greenhouse gas (GHG) emissions, 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 HSE data 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.

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 ISQC1.2 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 2017. 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 April 2018

Visit bp.com/assurance for Ernst & Young’s specific observations.

1 International Federation of the Accountants’ International Standard for Assurance Engagements (ISAE3000) Revised, Assurance Engagements Other Than Audits or Reviews of Historical Financial Information.
2 Parts A and B of the IESBA Code; and the International Standard on Quality Control 1 (ISQC1).
Advancing the energy transition
How the energy world is changing and how we’re helping advance the transition.
bp.com/energytransition

Sustainability Report 2017
Covers our sustainability performance with additional information online.
bp.com/sustainability

Annual Report 2017
Details of our financial and operating performance in print and online.
bp.com/annualreport

BP Energy Outlook
Provides our projections of future energy trends and factors that could affect them out to 2040.
bp.com/energyoutlook

BP Technology Outlook
How technology could influence the way we meet the energy challenge into the future.
bp.com/technologyoutlook

Cautionary statement

BP Sustainability Report 2017 and bp.com/sustainability contain certain forward-looking statements – that is, statements related to future, not past events and circumstances – which may relate to the ambitions, aims, targets, plans and objectives of BP – as well as statements related to the future energy mix, the future of electric vehicles and future emissions and carbon policies and plans relating to the diversity of our workforce. 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 of the control of BP. Actual results or outcomes may differ from those expressed in such statements, depending on a variety of factors including those set out in the “Risk factors” in our Annual Report and Form 20-F 2017 and other matters referred to at bp.com/energytransition.

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 2017 may be downloaded from bp.com/annualreport. No material in this Sustainability Report forms any part of that document. 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.