bp



BP's impact on the UK economy

A report by Oxford Economics
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OXFORD ECONOMICS



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About Oxford Economics
Oxford Economics was founded in 1981 as a commercial venture with the University of Oxford's business college to provide economic forecasting and modelling to businesses and financial institutions. It has become one of the world's foremost independent global advisory firms, providing research, forecasts and analytical tools on 200 countries, 100 industrial sectors and more than 3,000 cities and regions globally.

Oxford Economics is a key adviser to corporate, financial and government decision makers and thought leaders. Its worldwide client base now comprises more than 1,000 international organizations, including leading multinational businesses and financial institutions; key government bodies and trade associations; and top universities, consultancies and think tanks.

Foreword



Welcome to this report on BP's contribution to the UK economy. It sets out to quantify the impact of our business in more detail than we have provided before. We hope it will be of use in understanding how a large business plays its part in creating wealth and adding value to the national economy.

The UK is today the world's fifth largest economy and a major global exporter of goods and services. Wealth creation and international trade are critical to its success. Yet nations do not in themselves create wealth or engage in trade. That role lies principally with the individual business, large or small, private or public. BP is one of the UK's largest businesses and the UK has been its home for more than 100 years. Our activities touch almost every part of the UK economy. Just as important, but less obvious, our operations positively affect the economic fortunes of the many thousands of smaller businesses that play a major role in the UK's wealth creation at home and abroad.

There are also other impacts that arise when a business is deeply embedded in the social fabric of a country. Successful modern societies are not judged on economic performance alone. That's why this report also looks at BP's investments in areas that strengthen UK communities, our support for educational initiatives to advance the UK's science and engineering capabilities and our sponsorship of activities that widen access to the best in arts and culture.

We commissioned Oxford Economics – an independent consultancy group specializing in economic impact analysis – to provide an insight into all these activities and to assess their economic and social impact in the UK. Their findings paint an important picture of our role in the nation's economic health. Specifically, they measure the impact through the level of jobs created and sustained, the taxes generated and the outputs of the goods and services provided by different sectors.

I am proud of what this report has found. It shows that BP's economic contribution to the UK remained substantial in 2014, despite the fact that BP and other businesses in the oil and gas sector have been affected by the worldwide decline in oil and gas prices.

We plan to continue making long-term investments in our UK businesses in order to provide the energy that the country needs, as well as delivering the many economic benefits that our activities generate.

Bob Dudley
Group chief executive, BP

Executive summary

- BP supported an estimated £8.4 billion gross value added contribution to the UK's gross domestic product (GDP) and 132,100 UK jobs in 2014.
- Of this total, BP's direct UK operations – such as oil and gas fields, petrochemical plants, fuels retailing facilities and major offices – created a £2.3 billion gross value added contribution to UK GDP and employed 18,850 people.
- BP spends £5.5 billion a year with UK suppliers. This represents 71% of all procurement by its UK operations, supporting an estimated £4.1 billion indirect contribution to GDP and 82,000 jobs.
- BP's £2.2 billion capital expenditure supported an estimated £1.9 billion gross value added contribution to GDP and 31,300 jobs. In addition, BP's international businesses spent £1.2 billion on goods and services from UK-registered businesses operating abroad.
- BP's direct, indirect and capital expenditures are estimated to have supported one in every 244 jobs in the UK in 2014, or 0.4% of all employment in the country.
- An estimated 0.5% of UK GDP in 2014 was in some way reliant on BP's activities – whether directly, indirectly, or through BP's capital expenditure. That is £1 in every £217 of GDP created in the UK during the year.

Report highlights

BP's economic impact in the UK is important and substantial in terms of its contribution to the nation's output, investment, jobs and communities.

£8.4bn
contribution made to UK GDP

£2.2bn
spent in capital investment in the UK

BP supported
132,100 jobs
one in every 244 in the UK

£1.2bn
spent with UK businesses operating overseas

£7.7bn
spent with UK businesses

BP's activity supported
0.5%
of UK GDP

BP has been working with UK schools for
45 years

Supporting world-class arts and culture in the UK for
35 years

How BP contributes *directly* to the UK's economy

BP's multiple business operations in the UK create direct economic impacts in terms of production, jobs, taxes and dividends. This section considers the nature and scale of these impacts.

BP directly contributes

£2.3 bn

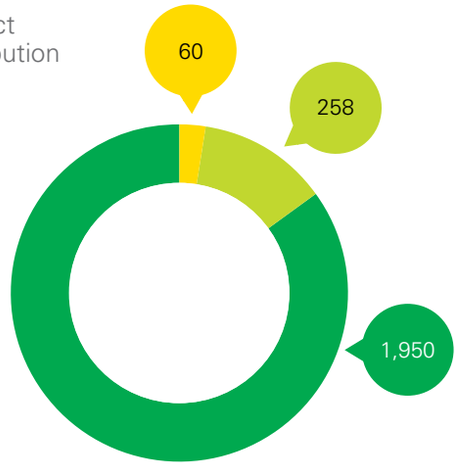
to UK GDP

"We at BP are proud of the contribution we make in the UK, and we remain committed, with billions of pounds of planned investment across our businesses in the UK."

Dev Sanyal
Executive vice president, strategy and regions, BP

Composition of BP's direct gross value added contribution to UK GDP in 2014

(£ million)



Source: BP

The health of the British economy and unemployment consistently rank among the top concerns for people in the UK, according to the Economist/Ipsos MORI Issues Index. To assess the size and growth of the UK's economy, the government regularly measures the direct contribution of each individual producer, industry or sector in the UK. This contribution – known as gross value added – is summed for all UK businesses to calculate the country's gross domestic product (GDP).

As one of the UK's largest businesses and a major energy producer and supplier to the UK, BP makes a significant direct contribution to UK GDP in terms of gross value added. BP's contribution can also be assessed in terms of the UK jobs that its activities directly support and in the taxes that it pays or collects on the UK government's behalf.

Value added from BP's UK operations

BP's gross value added contribution to the UK has been measured using the 'income approach', which comprises the earnings (profits) generated by BP's UK-based operations, the remuneration to UK employees and the business rates paid in the UK. These are derived from a range of sources, including North Sea oilfields and retail sites selling fuel and food. They also include BP's international headquarters in London and its many offices and facilities around the UK.

In 2014, BP produced a direct gross value added contribution to the UK economy of £2.3 billion. That comprised nearly £2.0 billion in employee compensation, £258 million in earnings before interest, tax, depreciation and amortization (EBITDA) and £60 million in business rates.

Employment

Across the UK, BP employed 18,850 people, mostly in highly skilled



Case study

World-class skills in the UK

Across the UK, BP employs talented people from a diverse range of backgrounds. They work in a host of different environments including, bustling trading floors, state-of-the-art laboratories, offshore platforms, forecourts and on board oil and gas ships. BP's geoscientists are pushing back the frontiers of geology to safely find and develop more resources. Its engineers take on some of the largest, most complex projects in the world. Biochemists lead the search for cleaner, more efficient fuels and sales professionals make sure that millions of customers' needs are met each day.

"Working for BP in the North Sea has provided me with a firm foundation and has taught me a strong work ethic. Working in this environment hasn't been easy; it has certainly presented many challenges. The potential for learning and development is vast and I see my future as being bright."

Matthew Whittaker
Apprentice, North Sea business, BP

jobs, who undertook a diverse range of activities. These included exploring and producing oil and gas off the UK coast; science and engineering research at centres around the UK; and commercial and administrative roles involved with the transporting, trading, marketing and retailing of oil and oil products, gas and petrochemicals.

Paying and collecting taxes
BP's UK activities generate a substantial tax contribution to the UK Exchequer. In 2014, this totalled nearly £2.4 billion. BP contributes to UK taxes in two ways. Firstly, BP pays taxes to the UK Exchequer, based on its net UK earnings, business rates, employer national insurance, stamp duty and other taxes. These amounted to a net £115 million contribution – a significant but lower figure than in recent years. This is largely due to significantly lower oil prices and tax offsets. These offsets help to incentivize investment. An example of this is BP's North Sea business, where BP is engaged in a £10 billion capital investment programme with its partners. This will help to realize the remaining potential of the UK's North Sea resource base. Secondly, its sales of fuels to customers and payment of salaries to employees generate significant excise duties and taxes, which BP collects and pays to the Exchequer. In 2014, these represented a total of £2.3 billion, of which £656 million was paid as employee income tax and £61 million as employee national insurance contributions.

Dividends
BP's operations also help to support the payment of dividends. In 2014, BP paid £1.3 billion in dividends to UK shareholders.

"The UK has been home to BP for more than a century and is a key part of BP's continuing success as a major international energy business."

Peter Mather
Head of country, UK, BP

1,200

forecourts in the UK





Case study

At work in the North Sea

In the North Sea, BP's activities span the entire industry lifecycle, from exploration to decommissioning. Over the past 50 years, it has invested some £35 billion in the North Sea and produced more than 5 billion barrels of oil and gas.

Along with partners, it is investing a further £10 billion in the region by 2017. This strategy allows BP to realize the significant remaining potential of its North Sea resource base. It is consistent with BP's strengths in managing giant fields and nurturing reservoirs to extend field life.

How BP contributes *indirectly* to the UK's economy

BP's businesses also have an indirect economic impact through their spending on goods and services with UK businesses and by making capital investments. This section considers how this creates a significant multiplier effect within the UK economy.

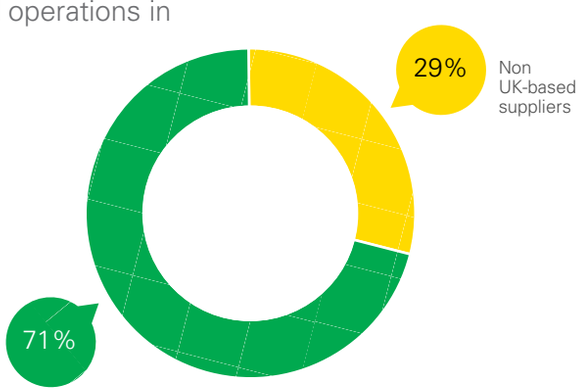
£7.7 bn

spent in the UK supply chain

"The complexity of the project has offered learning opportunities for individuals in our teams. There are probably a million little things I could say on the technical side that we learned."

Dave Stuart
Chief executive
Wood Group PSN

Percentage of spend by BP's British-based operations in the UK



Source: BP

BP's operations have a substantial direct impact on the UK's economy: they generate value added to GDP; create and sustain thousands of highly skilled jobs and contribute to UK taxes. What is not so obvious is how BP's activities also have a less visible but even greater indirect impact on the UK economy through BP spending on goods and services and undertaking capital expenditure with UK suppliers.

In order to operate its many facilities in the UK in 2014, BP spent £5.5 billion with 3,200 UK businesses that provide goods and services ranging from the provision of helicopter transport services to North Sea platforms, to the auditing of BP's annual accounts.

BP also spent £2.2 billion investing in capital goods. Its capital expenditure is an important source of investment in the UK economy. Capital expenditure is spending by BP to develop new, or to improve existing assets in energy production and supply. For example, purchasing technical equipment from a UK supplier to bring onstream new oil or gas fields adds to the UK's capital stock and expands the productive potential of workers who use the resulting facilities. BP's 2014 capital projects are expected to produce benefits for the business and to the UK economy for years ahead.

Operating expenditure and capital expenditure by BP creates an economic multiplier effect as British suppliers make purchases from their own supply chains to satisfy BP's orders for both goods and services. This has a pronounced impact on the value added to the UK's economy and on British jobs and taxes.

Value added from BP's UK spending

In 2014, 71% of spending on goods and services by BP's UK operations went to nearly 3,200 UK-based suppliers. These in turn supported a £4.1 billion gross value added contribution to the UK's economy.



Case study

Strengthening the UK's small and medium-sized enterprizes

BP's relationship with Broham Forecourt Developments (BFD) demonstrates how BP plays a vital role in supporting and strengthening small and medium-sized enterprizes (SMEs) in the UK. SMEs accounted for 60% of all employment in businesses in the UK in 2013. BFD is a 30-employee construction and civil engineering business. The company specializes in building filling stations and retail outlets and has been working with BP for more than two decades. In 2014, BP contracts accounted for roughly half of BFD's turnover. Kevin Porter, owner of BFD, said that working with BP had helped to build, maintain and train his permanent workforce.

BP encourages its construction-oriented contractors to build their skills through ongoing health and safety training. For example, BFD attained certification under the UKPIA Forecourt contractor safety passport scheme. In addition, BP provides seminars for its contractors – such as in asbestos awareness – and regularly shares bulletins summarizing industry best practice on health and safety issues. The resulting work systems, and BP's reputation for rigour in assessing and selecting contractors, mean that BFD now finds it easier to win contracts from other businesses.

In addition, BP's capital expenditure in the UK supported an estimated £1.9 billion gross value added contribution to UK GDP.

Overall, BP's total spend on goods and services and capital expenditure of £7.7 billion in 2014 supported an estimated £6 billion gross value added contribution to the UK's economy.

Employment

BP's spending also supported nearly 113,000 jobs in the UK – some 82,000 as a result of BP's spending on goods and services to support its operations and a further 31,300 UK jobs from its capital spending. For example, BP estimates that 92% of its capital spending on the Andrew Area Development in the UK North Sea was in the UK. At peak, 1,000 people were working on the project.

BP's spending on goods and services was heavily concentrated on certain industrial sectors, with nearly three-quarters of the total spend across 10 sectors. BP's capital expenditure was also highly concentrated, with 10 sectors accounting for 97% of all capital spend in the UK. More than £1 billion was spent in the architectural and engineering services sector and £530 million was spent in the mining and support services sector.

Taxes

BP's spending on goods and services likely resulted in £970 million in tax revenue for the Exchequer. Its capital expenditure is estimated to have supported £390 million in tax receipts – a total of £1.36 billion.

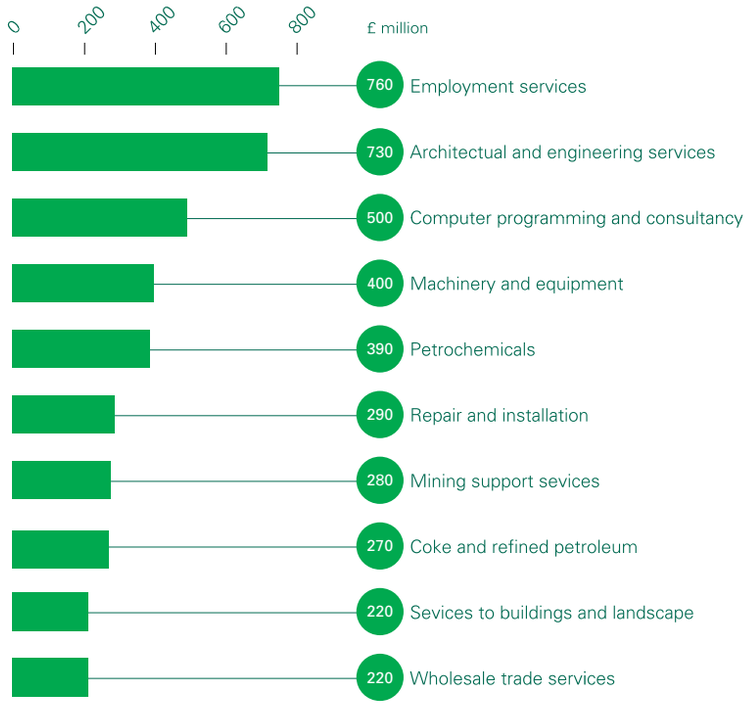
Induced impacts

The people employed by BP's businesses in the UK spend a share of their disposable income at local retailers and leisure outlets in the UK. The economic activity supported by BP employees' wage expenditure comprises BP's induced impacts on the UK economy. This wage-financed expenditure is estimated to have supported a £750 million gross value added contribution to UK GDP in 2014 and supported more than 16,000 jobs.

BP spending with UK businesses overseas

BP's international businesses spent £1.2 billion on procurement and capital expenditure with UK-registered businesses operating abroad in 2014. These included UK businesses active in countries as diverse as the US, Azerbaijan and Angola. While some of the profit these UK businesses earn may be repatriated, this report does not quantify its impact because the expenditure occurred outside the UK. However, it is likely that this expenditure helped to support or expand the global reach of a number of UK-registered businesses working across the globe.

Ten UK sectors receiving the largest amount of BP's UK operational procurement spend in 2014



Source: BP



Case study

Helping UK businesses to expand overseas

BP's relationship with PD&MS Group shows how BP can act as a springboard to international markets for UK businesses. PD&MS is a design and engineering business that provides services to the oil and gas, drilling, production and marine industries. The business specializes in 'brownfield engineering' services, including upgrades, maintenance, repairs and replacement of equipment.

BP currently has contracts with an annual spend of £15-20 million with PD&MS, which is equivalent to 30% of PD&MS's revenue in the 2013/14 financial year. PD&MS employs 250 people onshore in the UK and another 100 people offshore – around 40 of whom are working off the Shetland Islands' coast on the Magnus oilfield. Since beginning work with BP in 2012, PD&MS's CEO, Simon Rio, estimates that BP contracts have probably created in excess of 100 jobs for the business.

Prior to working with BP, PD&MS predominantly operated in the UK. It was first introduced to international markets through contracts with BP in Norway. Based on the success of that work, PD&MS secured a further contract with BP in Azerbaijan, Georgia and Turkey. BP helped PD&MS to set up an office in Baku, Azerbaijan, that has since doubled in size.

BP’s impact on the UK’s regional economy

BP has a large economic footprint across many parts of the UK. This section considers the geographic distribution of its economic impact in terms of regional GDP, jobs and diversity of UK suppliers.

132,100

British jobs supported by BP in 2014

“BP contracts probably created in excess of 100 jobs for the business.”

Simon Rio
CEO, PD&MS



BP’s direct contribution to GDP and employment by UK region on gross value added basis



Scotland
£430m
3,600 directly employed in Scotland

Yorkshire and the Humber
£100m
800 directly employed in Yorkshire and the Humber

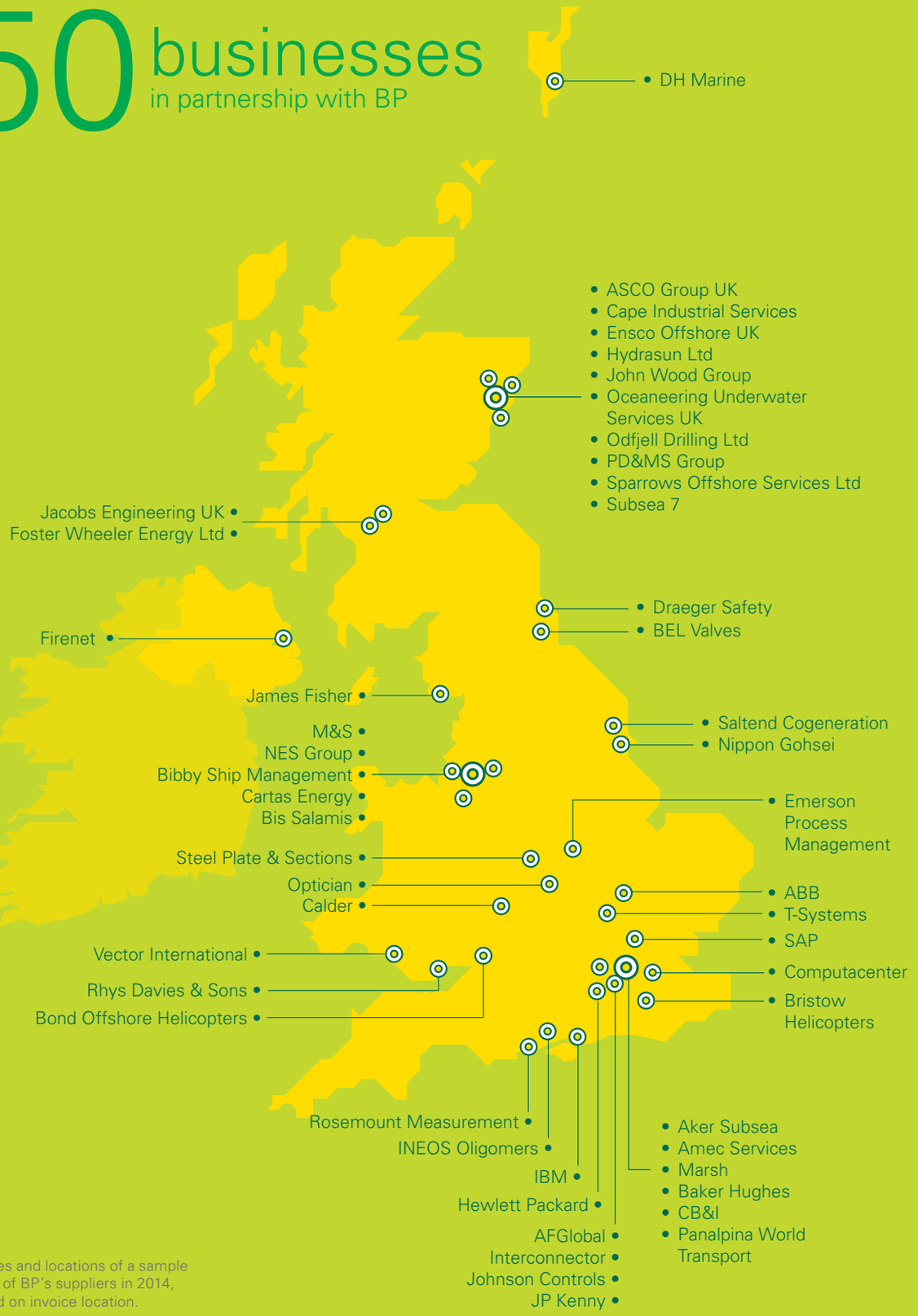
London
£540m
4,500 directly employed in London

Rest of UK
£190m
1,600 directly employed elsewhere in the UK

South East
£840m
7,000 directly employed in the South East

East of England
£160m
1,400 directly employed in the East of England

50 businesses in partnership with BP



Names and locations of a sample of 50 of BP's suppliers in 2014, based on invoice location.

Many BP businesses in the UK have important local or regional impacts. While every nation and region can be said to enjoy some economic benefit from BP's UK business activities, some experience a more pronounced impact.

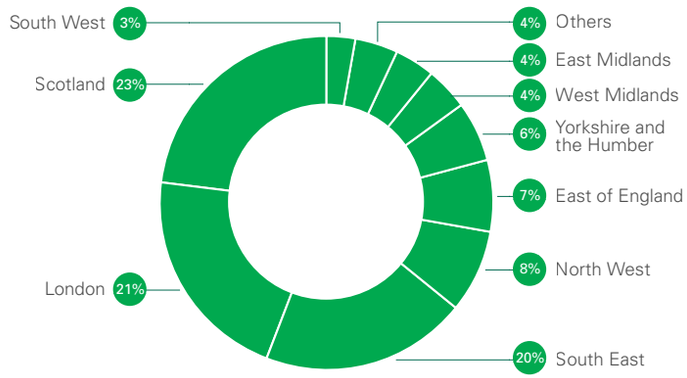
Value added to regional GDP by BP

BP's £2.3 billion gross value added direct contribution to UK GDP in 2014, comprising business earnings, remuneration and the business rates it paid, its earnings, and the business rates it paid, can be assigned to geographical regions.

Assuming these contributions arose where BP employed people, BP created an estimated £840 million in gross value added in the South East, £540 million in London, and £430 million in Scotland. Meanwhile, the business generated £160 million in gross value added in the East of England and £100 million in Yorkshire and the Humber. BP created another £190 million in gross value added elsewhere in the UK.

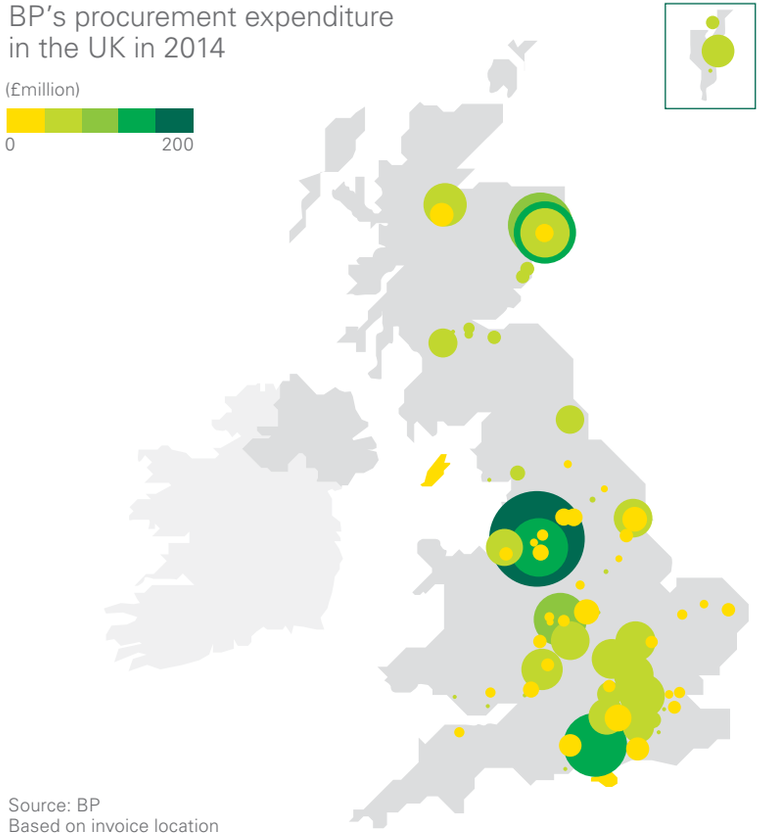
BP's spending on goods and services and capital expenditure also supported profits and wages in the UK supply chain. The largest indirect impacts occurred in Scotland, at an estimated £2.5 billion in 2014; London with £1.3 billion in gross value added; and the South East with £990 million. Significant spending by BP also supported £650 million in gross value added in the North West; £200 million in the East of England and £410 million in the rest of the UK.

Estimated geographic distribution of BP's nearly 3,200 UK suppliers of goods and services in 2014



Source: BP

BP's procurement expenditure in the UK in 2014



Source: BP
Based on invoice location

Employment

Some 132,100 British jobs were supported by BP's economic activities in the UK. In terms of employment by BP that is linked directly to its UK operations, more than 7,000 people were employed in the South East, nearly 4,500 in London, 3,600 in Scotland and 1,400 in the East of England.

However, the picture changes somewhat when considering BP's spending on goods and services and capital expenditure that indirectly supports employment. These impacts were most significant in Scotland (47,000 jobs), as well as the South East (18,200), London (18,900), and the North West (16,900). Elsewhere, BP activity supported the employment of nearly 3,700 people in the East of England and 2,200 in Yorkshire and the Humber. A combined 6,300 jobs were supported in the East Midlands, North East, South West, West Midlands, Wales and Northern Ireland.

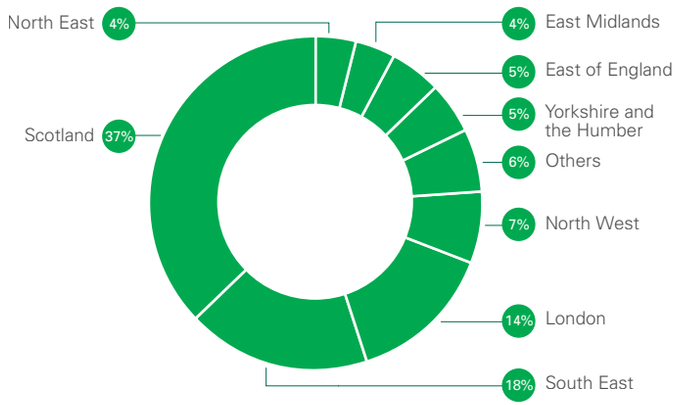
Supplier diversification

BP's suppliers of goods and services – nearly 3,200 UK businesses in 2014 – are distributed throughout the UK. Some 23% of them were located in Scotland, 21% in London, 20% in the South East, and 8% in the North West.

In 2014, BP spent £2.2 billion on capital expenditure in the UK, using nearly 950 suppliers. Of these, 37% were in Scotland, 18% were in the South East and another 14% were in London.

BP has relationships with a diverse range of UK suppliers, including engineering services in Aberdeen and Inverness, food wholesale in Manchester, shipping and logistics in Liverpool, air transport services in Gloucestershire and IT services in Portsmouth.

Estimated geographic distribution ofBP's nearly 950 UK suppliers of capital goods in 2014



Source: BP



Case study

BP at work across the UK

Aberdeen is the energy capital of Europe, as well as the headquarters for BP's North Sea business. From here, BP oversees its entire North Sea operations and is able to communicate directly with remote offshore platforms by means of video and real-time data links.

The Sullom Voe terminal in Shetland has processed more than 8 billion barrels of oil and gas since it opened in the 1970s. It is now helping BP to maximize recovery in the next phase in the life of the North Sea.

Hull is home to some of BP's most innovative and cutting-edge operations – whether researching chemicals or manufacturing acetic acid for a variety of products, such as paints, adhesives and solvents.

Swindon is the global headquarters of BP's lubricants business – including *Castrol* – and is where it manages production and marketing across the world. *Castrol* products have been marketed in the UK and overseas since 1909 and supply the highest performance lubricants for motor racing.

Milton Keynes is home to BP's retail and fuels businesses, which have around 1,200 BP service stations in the UK. It plays a vital role in ensuring that the different fuels BP produces reach the UK's motorists efficiently and effectively.

Sunbury in Middlesex is the original site of BP's research centre, established in 1917. It is now an extensive modern campus of office buildings, hosting a broad cross section of BP's international upstream, downstream, and shipping businesses.

Pangbourne, Berkshire, is the central hub of BP's global network of fuels and lubricants technology centres. Here, chemists, engineers and technologists carry out research and development for fuels and lubricants using advanced performance-testing facilities.

BP's investments in UK technology and innovation

BP invests around 40% of its global research and development (R&D) budget in the UK. This section considers how working with UK universities and venture companies is creating a host of growth opportunities for the future.

BP has been researching in the UK for

100 years

and today spends

40%

of its R&D budget in the UK

"It would be great to see some of the things that we're working on break through to the public domain, especially if we could develop new materials capable of outperforming those currently in use."

Aleksander Tedstone
PhD student, BP-ICAM

According to the UK government's *Innovation Report 2014*: "Innovation has been, and will continue to be, a key driver of UK growth and economic prosperity, accounting for up to 70% of economic growth in the long term."

Success in R&D tends to create benefits to society that can be greater than those to the businesses undertaking the initial spend. A key reason for this is the way in which innovations spread to the wider economy.

BP investing in 22 leading British universities
BP spent 40% of its global R&D budget in the UK in 2014. A large proportion of this spend was in collaboration with centres of excellence at 22 of the UK's leading universities or at three BP-owned technology centres. The funding supported research projects, research staff and postgraduate students. This included a project at Imperial College London to improve efficiency and thermal energy recovery in the oil and gas industry and a project for monitoring pipeline health at the University of Oxford. The BP Institute for Multiphase Flow at the University of Cambridge helps the business to better understand what happens when gases and liquids interact, with possible applications from oilfields to engine lubricants. BP also recently started the BP International Centre for Advanced Materials (BP-ICAM). This is a $100 million, 10-year research collaboration between BP and four of the world's leading universities.

BP investing in British technology venturing
BP also focuses on innovation in its broadest sense, through its BP ventures (BPV) organization. BPV partners with high-growth, game-changing, start-up technology businesses, often accelerating cutting-edge innovations across the entire energy spectrum. The investment portfolio is primarily focused on emerging technologies in oil and gas exploration and production and downstream conversion processes. BPV also partners with entrepreneurial companies specializing in biotech, water, advanced materials and digital technology.



Case study

Creating industry-changing materials

The International Centre for Advanced Materials (BP-ICAM) is a $100 million research collaboration. It is aimed at advancing the fundamental understanding and use of advanced materials across a variety of energy and industrial applications.

The University of Manchester's Faculty of Engineering and Physical Sciences is the hub for a network of world-class academic institutions, including the University of Cambridge, Imperial College London and the University of Illinois at Urbana-Champaign. BP-ICAM's initial research is focused on structural materials, functional materials, smart coatings, and separations.

As BP-ICAM develops, it will also study functional materials, catalysis, energy storage and energy harvesting. The 10-year investment programme is funding cutting-edge research into advanced materials and coatings that will be vital in finding, producing and processing energy safely and efficiently in the years ahead. As the oil and gas industry works at unprecedented depths, pressures and temperatures, and as refineries, manufacturing plants and pipeline operators seek ever-better ways to combat corrosion, new materials will be required.

BP investments in UK education, sports partnerships and arts and culture

BP also makes investments that seek to strengthen the communities where it operates. This section considers the impact of these investments in capability, community and culture.

45 years
working with UK schools

35 years
supporting British arts and culture

"It's great to see BP, in partnership with the Science Museum and King's College London, committing £4.3 million for teachers and museum educators to increase science capital amongst young people and their families. This will inspire young people and provide greater employment opportunities for them in the future."

David Willetts
Former UK Minister of State for Universities and Science

Over the past 45 years, BP has demonstrated a commitment to communities in the UK through support of arts and culture, sport, community organizations and charities while also developing talent in UK communities, through its support of STEM (science, technology, engineering and maths) subjects.

BP has focused these investments in programmes that encourage capability development, community capacity building and connecting people through access to world-class arts, culture and sport. 'BP in the community' initiatives involved a total spend of £8.51 million in 2014.

Developing capability
BP funds science education research and course content development. By doing so, it helps teachers and students to acquire abilities and knowledge in STEM subjects, which BP values highly.

For example, BP's research through the Enterprising Science programme, to which BP has committed £4.3 million over five years, is a collaborative effort with the Science Museum Group and King's College London. It studies the importance of the early engagement of girls – and others who are less likely to study science – in STEM subjects.

Project Enthuse, a programme BP co-funds at the National Science Learning Centre, offers bursaries for teachers to obtain continuing professional development training in STEM subjects. It aims to help schools to retain talented STEM teachers and, thereby, motivate students in STEM subjects. About 3,000 teachers and technicians attend the courses each year and the programme has reached 70% of all state-funded UK secondary schools.



Case study

The BP Portrait Award

More than a quarter of a million people visit the BP Portrait Award exhibition held at the National Portrait Gallery in London each year. The exhibition also tours the UK. Now in its 26th year of sponsorship by BP, the Portrait Award is the most prestigious international portrait painting competition and the free exhibition continues to be a highlight of the UK's annual art calendar. Each year, it showcases 55 of the most outstanding and innovative new portraits from around the world. From informal and personal studies of friends and family to revealing images of famous faces, the exhibition features a variety of styles and approaches to contemporary painted portraits.

Building community capacity

BP supports staff who wish to contribute their time, business knowledge and money to charities and social enterprises. It encourages employees to support community organizations and charities through volunteering and charitable giving. Working in partnership with community organizations and small businesses, its employees share their business expertise through project specific support and leadership roles.

Connecting culture

'Connecting through culture' is the third component of BP's community involvement. BP participates through long-term support of organizations such as the British Museum, Royal Opera House, Tate Britain and the National Portrait Gallery and their exhibitions. BP is also an international partner of the International Paralympic Committee, as well as an official partner of the British Olympic and Paralympic Associations, relationships that began for London 2012 and continued throughout the 2014 Commonwealth Games in Glasgow.



Case study

Enterprising Science – groundbreaking UK-wide science learning programme

The Science Museum, BP and King's College London launched Enterprising Science, the largest UK-wide science learning programme of its kind. The five-year partnership will bring together the expertise, experience and research of all three organizations to inspire and engage more young people in science, technology, engineering and maths (STEM). It aims to ensure that the UK remains at the forefront of science, technology and innovation. It will build on the success of the Science Museum and BP's previous five-year Talk Science project. Developing effective, evidence-based tools and techniques will bring science to life for young people, their teachers and families, both inside and outside the classroom.



Case study

The UK's Paralympians and Olympians

BP is a long-term supporter of the British Paralympic Association (BPA) and British Olympic Association (BOA), having forged successful partnerships through its tier-one sponsorship of the London 2012 Olympic and Paralympic Games. Throughout 2012, BP demonstrated equal backing for Paralympians and Olympians alike through its athlete ambassador programme. As the sustainability partner for London 2012, BP helped to create the most sustainable ever games, from supplying advanced fuels for use in the official vehicle fleet to its Target Neutral programme, used to offset the carbon from more than 500,000 people's travel to London.

In July 2013, BP committed to continue the journey with the BPA and BOA all the way through to the Rio 2016 Summer Paralympic Games. As part of this long-term strategy, it supports five athlete ambassadors, all of whom it supported in the run-up to London 2012 – including Paralympians Richard Whitehead, (left) and Stef Reid.

Methodology

The calculation of all impacts in this report is on a gross basis. The results, therefore, do not take into account the alternative potential uses of the people and other resources that BP and its suppliers use. This is standard practice due to difficulty determining the second best use of any resource.

Metrics used in economic impact studies

The economic impacts measured in this study are quantified using three metrics. These are:

Gross value added contribution to GDP – measures the contribution to the economy of each individual producer, industry or sector in the UK. It is a measure of net output, and the Office for National Statistics (ONS) aggregates gross value added for each industry in the UK economy to form the basis of GDP.[1]

Employment – this is measured on a headcount rather than a full-time equivalent basis. This is to facilitate comparison with employment data for industry sectors and regions sourced from the ONS.

Tax revenues – this is the value of tax revenue flowing to the Exchequer or local authorities.

Modelling the UK economy using input-output tables

In order to quantify BP's indirect, induced and capital expenditure impacts, the analysis in this report is based on ONS analytical input-output (IO) tables.[2] These tables can be used to estimate the impact on other industrial sectors as a result of BP's spend on inputs of goods and services and fixed assets, and BP's employees' spend at leisure and retail outlets. IO tables can be employed to create industry multipliers, through the so-called Leontief system.[3] Under the Leontief system, multipliers are calculated through a series of manipulations of the IO matrix.

The first manipulation is the creation of a base coefficients matrix, known as an 'A' matrix, for the UK. In this matrix, every cell is expressed as a proportion of that industry's output; for instance, any value in the mining column is expressed as a proportion of total mining output, and so on for each industry. The second step is creating an identity matrix, known as an 'I' matrix, whereby all values are zero except for when the consuming industry (columns) and the producing industry (rows) are the same; these cells are given a value of 1. The third action is the subtraction of the 'A' matrix from the 'I' matrix. The final manipulation is the inversion of the matrix produced in step three. The result of these matrix calculations is a table whereby the values represent the individual cross-multipliers for each sector, presenting the impact on each producing industry (row) of an increase by 1 unit of output in a consuming industry (column). The total multiplier for each consuming industry is the sum of the multipliers in the relevant column.

Estimating regional impacts using Flegg and Webber's methodology

Following UK economic impact modelling, regional economic impact modelling was carried out using techniques initially developed by the academics Flegg and Webber.[4] The techniques involve constructing regional IO models by applying location quotients (LQs)[5] and regional size adjustments to the standard UK IO tables. These adjustments allow for better estimates of the location of gross value added supported in the indirect, induced and capital expenditure channels. The result is that geographies with higher concentrations of industries receiving procurement or household expenditure have larger impacts. In addition, by dividing gross value added by estimates of regional productivity (the gross value added per employee per year)[6], estimates of total employment are made more accurate and the location of employment can be estimated.

[1] GDP is the most commonly used aggregate measure of total economic activity in the UK (and elsewhere). It is used to assess the economy's growth rate and whether the economy has entered or exited a recession. It is the sum of gross value added across all firms and sectors in the UK, plus the net of taxes and subsidies.

[2] ONS (2014), *2010 Input-Output Analytical Tables, 2014 edition,* 31 October. Input-output tables are designed to give a snapshot of an economy at a particular time, showing the major spending flows from 'final demand' (i.e. consumer spending, government spending and exports to the rest of the world); intermediate spending patterns (i.e. what each sector buys from every other sector – the supply chain); how much of that spending stays within the economy; and the distribution of income between employment income and other income (mainly profits). In essence, an input-output model is a table that shows who buys what from whom in the economy. The latest available domestic-use input-output table for the UK, published by the ONS, was for the calendar year 2010.

[3] Leontief (1986), *Input and output economics, second edition Oxford University Press.*

[4] Flegg and Webber, (2000), *Regional Size, Regional Specialization and the FLQ Formula.* Regional Studies, Vol. 34.6, pages 563-569.

[5] LQs are based on employment by sector by region.

[6] Productivity estimates for the UK overall are taken from ONS, (2014), *Annual Business Survey.* Productivity estimates by nation and region are estimated using ONS, (2014), *Business Register and Employment Survey* and ONS, (2014), *Regional Gross Value Added (Income Approach), December 2014.*

Glossary

The following terms are used in this report. Every effort has been made to align reported figures with Office for National Statistics (ONS) norms.

BP created/generated refers to metrics – such as gross value added, jobs, and tax – for which BP is directly responsible at its operational sites (direct impacts).

BP supported refers to metrics – such as gross value added, jobs and tax – that other businesses created because of BP's expenditure. For example, because BP purchased inputs of goods and services from them (indirect impacts), or because BP paid wages to its staff, who then spent them (induced impacts).

Capital expenditure is the money BP spent on fixed assets to be used by the business for more than a year.

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Core impacts are the gross value added, jobs and tax that BP creates (direct impacts) or supports in its supply chain through its procurement (indirect impacts).

Direct impacts are the gross value added, jobs and tax that BP generates at its operational sites.

EBITDA means earnings before interest, taxes, depreciation and amortization.

Employment or jobs is the number of people employed, regardless of whether their employment is full-time or part-time, or whether they are employed directly by BP or as an individual on a fixed-term contract.

Gross domestic product (GDP) is the most commonly used aggregate measure of total economic activity in the UK (and elsewhere). It is used to assess the economy's growth rate and whether the economy has entered or exited a recession.

Gross value added (GVA) comprises the profits, business rates and wages a business or industry creates or pays. UK GDP is gross value added summed across all businesses in the UK economy, plus net taxes and subsidies.

Indirect impacts are the gross value added, jobs and tax that BP supported along its UK supply chain through its procurement of inputs of goods and services.

Induced impacts are the gross value added, jobs and tax that BP supported by its payment of wages to staff, who then spent them at retail and leisure outlets.

Sales and other operating income refers to the money earned through BP's operational activities.

Procurement expenditure is the money BP spent on inputs of goods and services to be used up in the course of its operations in a single year.

Taxes are monetary payments to the Exchequer or local authorities.

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