
ENERGY & SUSTAINABILITY CASE STUDY SERIES

ExxonMobil Corporation Sustainability Case Study

How is ExxonMobil responding to the challenges of sustainability?

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DATAMONITOR VIEW

Catalyst

For over a century, oil and gas companies have freely developed the world's fossil fuel reserves with the sole aim of generating maximum profit. However, global sentiment toward energy and the environment is changing. World leaders are trying to forge a comprehensive global agreement on climate change that could put a cap on industry carbon emissions. Indeed, governments are setting themselves greenhouse gas (GHG) emissions targets over the next two decades and beyond, while green technology markets are the subject of highly favorable government subsidies and tax breaks. Elsewhere, oil and gas resources are becoming increasingly hard to find and highly energy-intensive to extract, and the companies producing them are expected to be more socially and environmentally responsible as operations come under more scrutiny than ever before.

The way the world's oil and gas companies respond to these new challenges will be crucial to the future energy mix and supply-demand balance. Sustainable development is an increasingly important facet of the modern energy industry, and in order for an oil and gas company to be seen favorably among governments and customers it needs to be seen operating in ways that are socially, environmentally and economically responsible.

Summary

This case study provides an analysis and assessment of how ExxonMobil Corporation (Exxon) is responding to the challenges of sustainable development in the oil and gas industry.

- company overview
- sustainability perception
- assessment of Exxon's sustainability efforts
- SWOT analysis
- scenarios to 2030
- conclusions and recommendations

COMPANY OVERVIEW

Below is a statement from Rex W. Tillerson, chairman of the board of directors and chief executive officer (CEO) at Exxon, taken from the company's annual report for FY2009.

"Global energy needs continue to evolve. For more than 125 years, ExxonMobil has been a leader in the evolution of energy and energy technology.

Around the world, more people are seeking access to energy and the economic and social progress it enables. Population and economic growth – particularly in developing countries – are expected to push global demand for energy higher by almost 35% by 2030 compared to 2005. New technologies – in areas like medicine, computing, and personal communications – are creating new demands for energy, while other technologies are enabling us to use energy more efficiently and with less environmental impact. New energy sources are also emerging.

This evolution of energy and technology is not new. Our energy landscape has transformed repeatedly over the past 150 years, as new technologies change not just how consumers use energy, but also the types of energy they use. It is important to remember, however, that these shifts happen gradually, over the course of decades.

Looking forward we see a dual challenge.

Providing energy to meet growing needs while protecting the environment requires an integrated set of solutions."

History

The two chief predecessors of Exxon and Mobil, Standard Oil of New Jersey (Jersey Standard) and Standard Oil of New York (Socony), date back to 1882, when John D. Rockefeller acquired various petroleum interests and organized them under the Standard Oil Trust.

In 1911, Standard Oil Trust was dissolved, resulting in the creation of 34 spin-off companies, including Jersey Standard and Socony. In 1931, Socony merged with Vacuum Oil Company. In 1955, Socony-Vacuum became Socony Mobil Oil Company; and in 1966, it was named Mobil Oil Corporation. Jersey Standard changed its name to Exxon Corporation in 1972.

Exxon Corporation and Mobil Oil Corporation merged to form ExxonMobil Corporation in 1999. "This merger will enhance our ability to be an effective global competitor in a volatile world economy and in an industry that is more and more competitive," said Lee Raymond and Lou Noto, chairmen and CEOs of Exxon and Mobil respectively at the time.

Exxon is a vertically integrated oil and gas company based in the US, and is a manufacturer and marketer of commodity petrochemicals, including olefins, aromatics, polyethylene, and polypropylene plastics and a range of specialty products. It also has interests in electric power generation facilities. The company operates across the globe. It is headquartered in Irving, Texas and employs about 80,700 people.

Exxon has numerous divisions and hundreds of affiliates with names that include ExxonMobil, Exxon, Esso, and Mobil. Exxon is predominantly involved in the exploration, production, and development of crude oil and natural gas (upstream), as well as manufacturing, transporting, and selling petroleum, crude oil, and natural gas products (downstream).

A major part of the company's strategy moving forward is to diversify its product range, and in 2003 the company launched its first synthetic blend motor oil for high mileage engines. In the same year, the company consolidated its US East and US West production organizations in order to improve business performance. Towards the end of 2003, Exxon subsidiary Mobil North Sea made a gas discovery in the southern sector of the North Sea, following the successful testing of an exploration well (approximately 50km off the east coast of the UK).

However, arguably the most important part of Exxon's future strategy is to continue investing in development of its global oil and gas portfolio. In 2004 the government of Qatar and Exxon subsidiary ExxonMobil Qatar GTL entered into a heads of agreement for a gas-to-liquids (GTL) project worth about \$7bn. In the same year, the company strengthened its exploration and production activity in Angola and Colombia. In 2005, Qatar Petroleum, Exxon, and Edison entered into an agreement for developing a liquefied natural gas (LNG) terminal offshore from Italy in the North Adriatic Sea.

In 2007, Exxon completed phase one of the Sakhalin-1 project offshore Eastern Russia with affiliates of Rosneft, RN-Astra and Sakhalinmorneftegaz-Shelf, Sakhalin Oil and Gas Development Company, and ONGC Videsh.

Exxon operates through four segments: upstream, downstream, chemicals, and technology. The upstream segment explores for and produces crude oil and natural gas. The company's upstream business has operations in 36 countries and includes five global companies. These companies are responsible for the corporation's exploration, development, production, gas and power marketing, and upstream-research activities. The company's upstream portfolio includes operations in the US, Canada, South America, Europe, Asia Pacific, Australia, the Middle East, Russia, the Caspian region, and Africa.

The downstream (refining and supply) operations encompass a global network of manufacturing plants, transportation systems, and distribution centers that provide a range of fuels, lubricants, and other products and feedstocks to its customers around the world. At the end of FY2009, the company had interests in 37 refineries across 21 countries, with distillation capacity of 6.3 million barrels per day (bpd) and lubricant base stock manufacturing capacity of 143,000bpd. In FY2009, Exxon's refinery throughput was 5.4 million bpd.

The fuel marketing business operates throughout the world. The Exxon, Mobil, Esso, and On the Run brands serve motorists at nearly 28,000 service stations, and provide over 1 million industrial and wholesale customers with fuel products. The company supplies lube base stocks, and markets finished lubricants and specialty products.

The chemicals division manufactures and sells petrochemicals. ExxonMobil Chemical is an integrated manufacturer and global marketer of olefins, aromatics, fluids, synthetic rubber, polyethylene, polypropylene, oriented polypropylene packaging films, plasticizers, synthetic lubricant base stocks, additives for fuels and lubricants, and other petrochemical products.

Exxon's technology division helps it keep pace with the rising global demand for energy by enabling the development of ever harder to find natural resources. A further challenge for Exxon is to carry on meeting growing demand for oil and gas while trying to mitigate its impact on the environment, as global awareness of climate change and other forms of environmental degradation rises, as well as pursuing sustainable and socially responsible policies across all its business practices.

Subsidiaries & brands

Table 1: Key subsidiaries		
ExxonMobil Chemical Company	ExxonMobil Exploration & Production	Esso Exploration Angola
Mobil North Sea	ExxonMobil Exploration & Production Malaysia	ExxonMobil Refining and Supply Company
ExxonMobil Libya	ExxonMobil Exploration & Production Turkey	ExxonMobil Research and Engineering
ExxonMobil Gas and Power Marketing Company		
Source: Exxon		DATAMONITOR

Table 2: Key subsidiaries		
ExxonMobil Aviation	ExxonMobil Marine Fuels	ExxonMobil Lubricants & Specialties
ExxonMobil Aviation Lubricants	ExxonMobil Marine Lubricants	Mobil
ExxonMobil Chemical	ExxonMobil Technology Sales & Licensing	Mobil Industrial Lubricants
Exxon		
Source: Exxon		DATAMONITOR

SUSTAINABILITY PERCEPTION

Overview

The way in which Exxon's sustainability policies and practices are communicated is central to how the public, governments and other associations, non-governmental organizations (NGOs), and ratings agencies perceive the company. Exxon can communicate its sustainability performance using various methods including annual sustainability reports, annual company reports and filings to the US Securities and Exchange Commission (SEC), and its company websites. However, Exxon has little control over the way external institutions choose to communicate its sustainability performance, and this has a significant impact on the way the company is perceived. It can be argued that Exxon has not been effective enough in explaining its policies, and opponents of the company have been more effective in communicating a detrimental image of the company.

The following section gives a general overview of the perception of Exxon – in regards to its sustainability efforts – among the public, governments and other associations, NGOs, and ratings agencies, and within the company itself.

Exxon Valdez oil spill

Exxon's reputation regarding environmental sustainability was critically damaged by the Exxon Valdez oil spill in Prince William Sound, Alaska, on March 24, 1989. More than 250,000 barrels of oil were spilled into Alaskan coastal waters polluting an estimated 1,300 miles of coastline, causing devastation to regional fish stocks, killing over 250,000 sea birds and many hundreds more bald eagles, harbor seals, sea otters, and other animals. However, it was the company's response to the disaster that was most harmful to its public image, and eventually its financial performance. The disaster became a watershed moment for public scrutiny into the conduct of multinational oil companies.

After the spill it took 10 hours for Exxon to initiate attempts to contain it and a further seven days for the company to release a statement. Exxon is still embroiled in legal conflicts regarding the spill to this day. On Exxon's company website it claims to have taken "immediate responsibility for the spill" and that it has spent over \$4.3bn as a result of the accident, including compensatory payments, cleanup payments, settlements and fines, as well as voluntarily compensating more than 11,000 Alaskan citizens and businesses within a year of the disaster.

However, Exxon has been widely criticized for its slow and uncoordinated response to the spill, after the company called-off efforts after four summers of clean-up operations involving 10,000 workers, 1,000 boats, and a fleet of aircraft and helicopters. The controversy continued after Exxon cancelled the effort, as almost 7,000 workers involved in the clean up later reported "respiratory distress" after inhaling toxic vapor (including hydrogen sulfide and benzene) given off by the oil slick. Furthermore, according to the *London Times*, 12 years after the spill, one survey showed that oil could still be found on half of the 91 randomly selected beaches inspected.

The public backlash included a boycott of Exxon's products by thousands of customers in the first six months after the spill, which resulted in net income falling by a third, and 12 months after the spill Exxon's share price was 20% below the pre-spill level.

Nonetheless, Exxon insists it has made changes to prevent a similar accident by redoubling its "long-time commitment to safeguard the environment, employees and operating communities." The measures Exxon has adopted to ensure greater sustainability in its business practices include: modifying tanker routes; instituting drug and alcohol testing programs for

employees in safety-sensitive positions; implementation of extensive periodic assessments of ExxonMobil vessels and facilities; and employing new technology to improve vessel navigation and ensure the integrity of oil containment systems.

Since the Valdez incident Exxon's oil spill record has been very good (see the "Environmental sustainability – Spills" section of this brief) and the company claims to have improved its response capability since 1989. Measures include: becoming a founding member of every major oil spill response center worldwide; creating a 1,000 strong oil spill response team; and developing and applying new spill-detecting technology.

The settlement between the State of Alaska, the US government, and Exxon Corporation was approved by the US District Court in 1991. According to a report by the Exxon Valdez Oil Spill Trustee Council, the settlement resolved various criminal charges against Exxon, as well as civil claims brought by the federal and state governments for recovery of natural resource damages resulting from the oil spill. The settlement had three distinct parts:

- **Criminal Plea Agreement** – Exxon was fined \$150m, which at the time was the largest fine for an environmental crime. However, after an appeal from Exxon, the federal government took the controversial decision to reduce the fine to \$25m in recognition of the company's efforts to clean the spill and paying settlements in various private claims.
- **Criminal Restitution** – Exxon agreed to pay \$100m for the harm caused to the fish, wildlife, and land. The money was divided between federal and state governments.
- **Civil Settlement** – Exxon agreed to an annual payment over a 10 year period totalling \$900m, with the final payment being issued in 2001. However, the "reopener window," written into the initial civil settlement to account for damages unforeseeable at the time the settlement was signed in 1991, was utilized in 2006 when the state and federal governments demanded that Exxon fund restoration projects at a cost of \$92m, based on the continued presence of oil in the habitats of the Prince William Sound and Gulf of Alaska beaches.

20 years on, and despite the scenery and wildlife in Prince William Sound seemingly returning to a similar level of cleanliness and beauty that existed before the Exxon Valdez spill, oil still exists in the environment and, in some places, is as toxic as it was in the weeks following the spill in 1989, and restoration efforts continue to this day.

Public/media

Exxon's projects and facilities often operate in areas close to communities and have a direct impact on people's lives and the surrounding environment. The company's presence in or near a community can be highly beneficial, providing jobs and economic growth, but it can also bring significant environmental and personal health costs. Therefore, Exxon must work continuously to improve its social performance, and help to maintain positive public relations with those both directly and indirectly affected by its business operations.

However, as global sentiment shifts towards a less carbon-intensive energy future in order to mitigate mankind's effects on the environment, Exxon has struggled to adapt its everyday business practices to the pace at which attitudes have changed. Exxon has long been considered the major oil company least convinced about climate change; in fact, the phrase "climate change" did not even appear in an Exxon Corporate Citizenship Report (CCR) until 2004.

Unfortunately, Exxon Valdez was not an isolated incident in regards to the company's environmental conduct tarnishing its public image. There is a widespread negative public perception about Exxon's human rights record, foreign business

practices, and policies on corporate equality in the workplace, and this perception has been spread by the mainstream media into the public domain.

One of the major criticisms of Exxon is that it has funded organizations and think tanks critical of the Kyoto Protocol, and skeptical of the scientific opinion that climate change is caused by the burning of fossil fuels. It is well documented that Exxon was a prominent member of the Global Climate Council (GCC) until 1998, an organization which, until being "deactivated" in 2002, openly opposed immediate action to reduce GHG emissions. Formed in 1989 as a response to several reports from the Intergovernmental Panel on Climate Change (IPCC), the GCC lobbied heavily against governments, and mounted advertising campaigns in the US to turn public opinion against the notion of global warming.

The *Guardian* newspaper and leading environmental NGO Greenpeace have both reported that Exxon has at some stage funded the Competitive Enterprise Institute, Heartland Institute, Committee for a Constructive Tomorrow, and the Frontiers of Freedom Institute, all groups that are skeptical about the effects of global warming. According to Greenpeace, Exxon's contributions to groups skeptical of climate change totaled approximately \$23m between 1998 and 2007.

In 2007, Exxon's VP for public affairs Kenneth Cohen announced that Exxon would be ceasing funding for the Competitive Enterprise Institute and "five or six similar groups." In the same year, Exxon CEO Rex W. Tillerson gave environmentalists something of a double-edged "acknowledgement" when he admitted that the planet was indeed warming as CO2 emissions were rising, but he saw no viable alternative to fossil fuels in the coming decades, while stating that the exploration and development of oil and gas would remain Exxon's primary objective.

However, in July 2009 the *Guardian* released a report claiming that Exxon was continuing to fund climate-skeptic groups. The report claimed that company records showed Exxon handed over hundreds of thousands of dollars in 2008 to groups including the National Center for Policy Analysis (NCPA) based in Texas, which received \$75,000, and the Heritage Foundation based in Washington DC, which received \$50,000. At the time a spokesman for Exxon said: "Only ExxonMobil speaks for ExxonMobil and our position on climate change is clear. We have the same concerns as people everywhere, and that is how to provide the world with the energy it needs while reducing GHG emissions. We take the issue of climate change seriously and the risks warrant action."

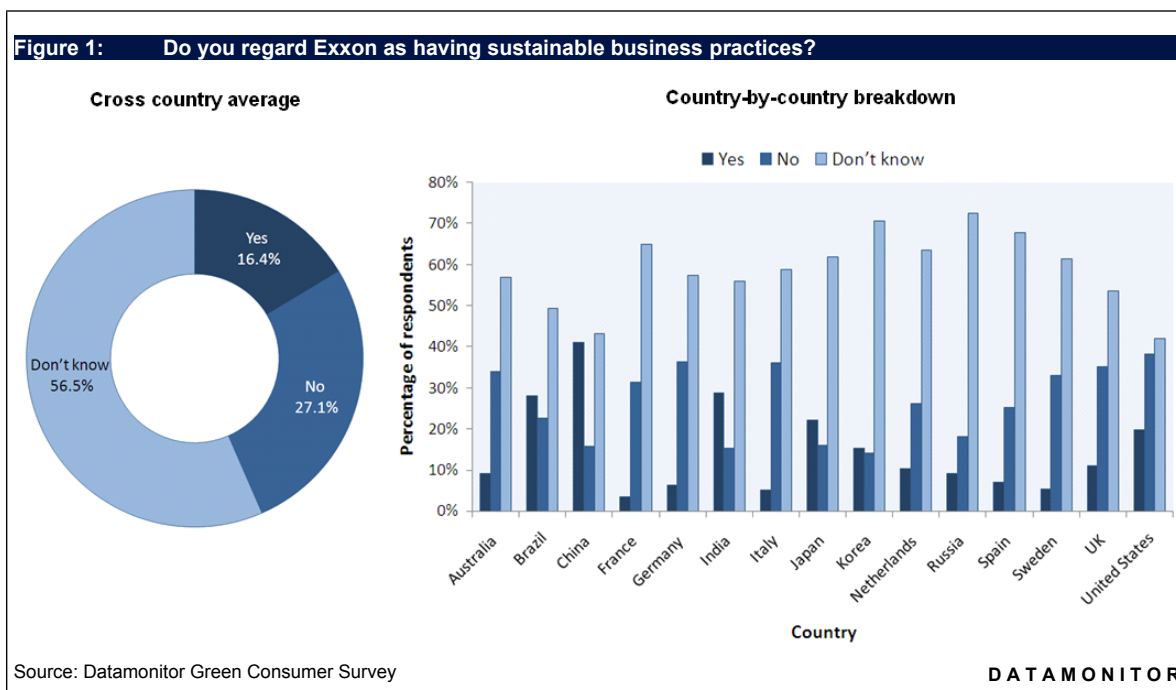
In 2007, around the same time Exxon began pulling the plug on research groups in opposition to climate change, Tillerson, in a brief to a group of Wall Street fund managers, stated that he believed Exxon had an "image" problem. "We recognize that we need to soften our public image. It is something we are working on," he said.

Therefore it is not surprising that three years later, when the momentum gathered by climate change lobbyists shows no sign of slowing, Exxon spent approximately \$14m on media advertising in the UK alone between August 2009 and July 2010. It is estimated that it spends well over \$100m on advertising both for its fuels and lubricants products each year as it sets about trying to reverse the prevailing public opinion that it remains the most unsustainable multinational energy company.

However, in 2008 UK advertising watchdog the Advertising Standards Agency (ASA) banned an Exxon television advertisement that claimed LNG was "one of the world's cleanest fuels." The ASA accused the ad of misleading the public, declaring in a statement that: "We concluded that the advertisement misleadingly implied that natural gas was one of the cleanest sources of energy and that liquefied natural gas was environmentally friendly."

Exxon stood by the advertisement, arguing that it “does not make any claims about the environmental characteristics of liquefied natural gas,” and the claim that LNG will play an important role in delivering energy supplies to meet growing global demand is “widely accepted by international energy experts.” However, the ASA ruled the ad could not be shown in its “current form.”

There has never been a more important time for Exxon to sustain a positive public image as it tries to find a healthy balance between developing its upstream business to meet demand and working to promote a socially and environmentally sustainable profile. Figure 1 below provides an idea of whether people in various countries regard Exxon as having sustainable business practices.



In Datamonitor’s June 2010 Green Consumer Survey, 9,089 people across 15 countries were asked whether they regard Exxon as having sustainable business practices. Figure 1 gives a breakdown of the responses per country as well as the average cross-country responses.

Governments and associations

Exxon and its subsidiaries have some of the most extensive access to governments of all the companies in the global oil and gas industry, with a number of departments dedicated to government affairs, particularly in Europe and the US. Exxon operates in almost 80 countries, encountering various levels of bureaucracy, regulation, and security, and has developed vast experience in dealing with national governments, which is extremely useful when it comes to facilitating relationships with different governments.

Below is a selection of countries in which Exxon has or has had a stake in a large project, and an overview of the relationship with the governments and associations.

US and North America

Around 40–45% of Exxon's resource base is in the Americas, and it has a huge production, development, and retail presence in the US. The company belongs to the US Council for International Business (USCIB) and, along with 300 other American corporations, is involved in lobbying the US government. A recent example was lobbying against the Obama administration's eventually unsuccessful climate change bill.

Exxon's role in the USCIB can put it in conflict with the US government, but the USCIB is extremely important to US organizations and their role in international trade. It is the US affiliate of the International Chamber of Commerce (ICC) and the International Organization of Employers (IOE). More importantly, the USCIB is also the US affiliate for the Business and Industry Advisory Committee (BIAC) to the Organisation for Economic Cooperation and Development (OECD).

Through meetings, conferences, and publications, Exxon engages with external groups to provide information and develop guidance. The company works closely with business associations such as International Petroleum Industry Environmental Conservation Association (IPIECA), the USCIB, the International Association of Oil & Gas Producers, and the International Business Leaders Forum.

Exxon has extensive upstream and downstream operations in many of the US states, including offshore drilling projects in the Gulf of Mexico. This vital role in US energy supply means that Exxon is able to exert significant pressure on both federal and state governments (See the "Economic sustainability – public advocacy and lobbying" section of this brief).

Indonesia

Exxon has a growing presence in Indonesia, and will play an increasingly important role in meeting the country's rising energy demands over the next few years. As a result, its reputation with the nation's government is quite favorable. Indonesia's energy demand is fully expected to increase in line with its economic development and population growth, and among the G20 nations it only lags behind China and India as the world's fastest growing economy. Energy demand is growing at a rate of about 7% per year, and this increased appetite for natural gas is where Exxon plans to make the biggest contribution.

As well as very promising coal bed methane prospects in Indonesia, Exxon also has interests in extensive LNG projects, owning 100% of the Arun gas field that supplies the PT Arun LNG Plant. LNG production at this and other plants across the country produce around 245 million cubic feet per day (mcf/d).

In 2008 Exxon made a commitment to the Indonesian government in the form of a development plan for the Natuna D-Alpha Block to enter the next phase of development for this large offshore gas field, with significant development beginning in 2009. In 2009 Exxon also completed a number of deepwater exploration projects, as approximately 50% of the energy Indonesia consumes is petroleum products.

Despite high levels of activity exploring, producing, and developing fossil fuels in Indonesia, Exxon claims to be operating in a responsible manner in order to make its operations sustainable for the future. Exxon works with stakeholders to identify and fund initiatives that reduce the barriers to development in areas including health, education, and infrastructure.

Part of this involves collaboration between Exxon and 121 Indonesian villages to develop social programs that allow the ownership of projects by affected communities to be strengthened.

Exxon has faced widespread criticism over its human rights record in the country following accusations that the company is in support of Indonesia's notoriously violent military. However, in view of the fact that Indonesia is a multi-party democracy, Exxon can reasonably claim that it is working with institutions that are under the control of an elected government.

Russia

Over \$2bn of Exxon's capital and exploration expenditure is spent in Russia and the Caspian region. That equates to more than 7% of the company's total worldwide capital and exploration outlay for 2009. Exxon has operated in Russia for many years, but since the company acquired a 30% stake in the Sakhalin-1 oil and gas project – one of the largest single foreign investment projects in Russia, estimated to cost between \$10–12bn in total – the country has become a central part of Exxon's global portfolio and its plans for future oil and gas production. Exxon Neftegaz Ltd. (ENL) is a subsidiary of Exxon and the operator of the Sakhalin-1 consortium, which is involved in the exploration and production of onshore oil and gas on Sakhalin Island and offshore, in the Chvyo, Odoptu, and Arkutun-Dagi fields located in the Okhotsk Sea. The fields are forecast to yield approximately 2.3 billion barrels of oil and 17.1 trillion cubic feet (tcf) of gas.

The Sakhalin-1 project is hugely important to the future of Russia's oil and gas production and will be completed in phases. Oil production and gas sales to far east Russia began from the initial development phase of the Chavyo field in 2005. The project's permanent onshore processing facilities and export system were commissioned in 2006. By 2009, production averaged 170,000bpd and 149 mcf/d of sales gas. So far, approximately \$2.8bn has been spent on the project, helping to lower the unemployment rate as well as improve the tax base of the regional government.

Furthermore, 80% of ENL's employees are from Russia, creating 13,000 jobs as part of the initial development. A Russian cement company was also contracted to supply the cement used in Sakhalin-1's well casing operations, at a value of \$30m to date. Exxon claims that environmental protection measures are an integral part of project construction and operations activities, with specialized programs to protect native wildlife, including the western gray whale and Steller's sea eagle. The company also holds close consultations with the indigenous people of Sakhalin Island, helping ENL to understand important local issues.

While the Sakhalin-1 project is hugely beneficial for Exxon and both the regional and federal governments in Russia, it has not been free of controversy. Not only has there been considerable global interest over the supposed threat to the critically endangered western gray whale population, in 2007 Russia's own environmental watchdog launched a probe into alleged environmental violations at Sakhalin, after it was revealed that some sections of the Sakhalin-1 pipeline in the north of the island were threatened by soil erosion.

Exploration and production in the region is highly challenging due to extreme weather conditions. For six to seven months of the year much of the region is covered in thick ice amid temperatures as low as -45°F, as well as severe wave activity and the threat of earthquakes.

The Russian content of contracts awarded for the Sakhalin-1 project has exceeded \$4bn, or about two-thirds of the total. ENL began oil production at the Odoptu field in September 2010 and is expected to reach peak output of around 32,000bpd within 12 months.

Venezuela

Venezuela's role in the global energy market has evolved rapidly over recent years. The global economic downturn, highly volatile oil prices, political instability in the Middle East and African oil-producing states, and new buyers in Central and South East Asia have placed the world's seventh-largest oil exporter in a rather advantageous position.

In 2006, there was a turning point in relations between Venezuela and Exxon – along with many other international oil companies (IOCs) with interests in the country – due to the expropriation of its Venezuelan assets by the Chavez government. It was an ideologically driven attempt by Venezuela to squeeze foreign multinationals working to develop oil and gas resources in Venezuela. New terms dictated by the administration of President Hugo Chavez included: a minimum 60% stake for the state oil company Petroleos de Venezuela SA (PDVSA) in each field; PDVSA controlling the boards of new joint ventures with all foreign investors; and a hike in income tax rates from 34% to 50% and royalties from 16.6% to 33.3%. All companies operating in the country, including Royal Dutch Shell and Total, saw their potential drilling acreage slashed by almost two-thirds.

Exxon stood firm as the only challenger to Chavez's attempts to freeze out IOCs, and stated that it had no plans to pull out. Two years earlier, in 2004, Exxon threatened international arbitration when the Venezuelan government imposed a royalty increase on the Orinoco tar belt. Relations deteriorated further in December 2005 when Exxon surrendered its stake in the 15,000bpd Quiamare-La Ceiba field and again when PDVSA forced Exxon out of a multi-billion-dollar petrochemical project.

Exxon's resilience in the face of such hostility from the Chavez government can be attributed to the fact that IOCs are finding it increasingly difficult to gain or maintain access to major oil and gas resources around the world, and interests in countries such as Venezuela should not be given up lightly. Also, it is widely and justifiably believed that most (but certainly not all) of the national oil companies lack the technical expertise and financial backing required to efficiently and effectively exploit natural resources.

On October 20, 2010 Exxon reduced its arbitration claim against PDVSA from \$12bn to \$7bn. President Chavez forced foreign oil producers into joint ventures as minority partners in 2007, and is pursuing international arbitration with Exxon and ConocoPhillips, which rejected the revised terms. Meanwhile, Chavez has nationalized parts of the metals, cements, and utilities industries.

PDVSA and Exxon have prepared responses following an international arbitration hearing that concluded on September 24, 2010 and a ruling is expected to be made in 2011.

International

Exxon is involved with a number international organizations and associations, giving the company a degree of influence on high level decisions made on global and regional energy issues. Having a voice within these groups gives Exxon the opportunity to lobby for or against certain regulation and legislation.

The International Energy Agency (IEA), the Paris-based organization which acts as energy policy advisor to its 28 member countries in an effort to ensure "reliable, affordable and clean energy for citizens," is one of the most influential groups in the global energy industry. Its relationship with the world's oil majors can be quite sensitive. Most recently, the IEA has

been outspoken about “overheated” oil prices, and it was criticized for allegedly acting under pressure from the US in publishing controversial data on the outlook for oil supplies in its 2009 World Energy Outlook.

However, in early 2008 IEA executive director Nobuo Tanaka spoke out against Venezuela’s decision to stop oil sales to Exxon and vowed to “watch the situation closely.” In practice, the IEA can act only in the short term: if supplies of oil to the US were suspended by Venezuela there exist emergency measures to draw down international oil stocks, but this is not a long-term solution. Therefore, in practical terms the role of the IEA in Exxon’s ongoing dispute with the Venezuelan government is largely irrelevant. As of 2010, Exxon has not yet been invited to be a member of the World Business Council for Sustainable Development (WBCSD). The executive committee only invites companies it considers to be dedicated to sustainable development and to promoting the role of eco-efficiency, innovation, and corporate social responsibility (CSR). Other IOCs that have been invited to be member of the WBCSD include Shell, ConocoPhillips, Chevron, and BP.

The United Nations (UN) has a direct or indirect influence on the way all multinational businesses conduct themselves through its Universal Declaration of Human Rights (UDHR), and through bodies such as the UN Educational, Scientific, and Cultural Organization (UNESCO). Exxon is not a signatory of the UN Global Compact; however, the company claims that its 10 principles on human rights, labor standards, environment, and anti-corruption are intrinsic in its own standards of business conduct.

Nonetheless, grants through ExxonMobil Foundation’s Africa Health Initiative, which works to fight the spread of malaria in Africa, furthers the work of the UN Foundation and other leading philanthropic organizations such as the Malaria Vaccine Initiative, the Medicines for Malaria Venture, UNICEF, and the United States Agency for International Development (USAID).

Exxon CEO Rex W. Tillerson is a member of the executive committee of Business Roundtable, an association of CEOs of leading US companies founded in 1972 in the belief that in a pluralistic society, businesses should play an active and effective role in the formation of public policy. The member companies of the Business Roundtable have combined annual revenues of almost \$6 trillion, employ 12 million people, and contribute more than 60% of all US corporate income taxes. Through the Business Roundtable, Exxon can lobby the US government with policy suggestions and alternatives with the might of the nation’s leading CEOs behind it.

Non-governmental organizations

Exxon has come under continuous criticism and pressure from NGOs to adopt more sustainable and responsible business practices. As a multinational company making revenues from carbon-intensive extractive industries, Exxon will always be under pressure from NGOs, and will probably never be able to satisfy activists. The argument advanced by activists is that the damage to the environment and communities caused by Exxon’s operations are too great, and that the company is not acting responsibly enough as it works to increase energy supply to meet growing demand. However, it is entirely appropriate to point out on Exxon’s behalf that it is rising energy demand from developing countries that drives many of its businesses. These countries are not yet sufficiently advanced along their economic growth curve to be able to afford cleaner energy forms and, with much of their growth attributable to rising demand for electricity and transport that remains almost exclusively reliant on fossil fuels, there is an enormous challenge for these countries to develop sustainability. Large NGOs like Greenpeace, which has more than 2 million members worldwide, have the resources to challenge Exxon on issues which they feel strongly about, and can seriously influence public opinion. Greenpeace has been most active in

its criticism of Exxon regarding its stance on climate change. In 2002, for example, Greenpeace announced the launch of the US component of an international campaign against Exxon for its alleged efforts to undermine progress on global warming. As part of this campaign the environmental group published a report entitled *Denial and Deception: a Chronicle of ExxonMobil's Corruption of the Debate on Global Warming*. At the time, Kert Davies, a Greenpeace climate campaign coordinator said: "[Exxon's] propaganda machine has been hard at work for more than a decade spewing out junk science, fabricating doubts, and buying support of politicians from the local level all the way to the White House."

Shortly after that Greenpeace launched a two-year campaign during which it stepped up efforts to expose what it considered to be "one of the world's worst corporate polluters." From publicizing Exxon's misconduct, to seeking talks with Exxon officials, to protesting at Exxon service stations around the world, Greenpeace declared itself at the forefront of a global effort to stop "the company's attempt to manipulate a dirty energy policy in the US and interfere with international climate change negotiations."

Greenpeace instigated a number of product boycotts and its campaigns have, in the past, damaged Exxon brands such as Esso to the extent where they are considered an investment risk. Along with Friends of the Earth and People & Planet, Greenpeace established the "Stop Esso campaign," on the grounds that the company did not invest in renewables, denied global warming, and undermined the Kyoto Protocol. In 2002, Greenpeace UK received a leaked copy of a Deutsche Bank report to ExxonMobil. The confidential advisory states that the Greenpeace campaign against Exxon was harmful to the Esso brand: "While the company insists that it has suffered no fiscal impact from the (Greenpeace-led) boycott, being handed a reputation as environmental enemy number one for such a big customer-facing business has to be considered a brand risk."

A watershed moment came in 2004 when Greenpeace was ordered to sign a court agreement preventing its supporters from protesting against Exxon for seven years, the first ruling of its kind between a US company and an activist group. The consent judgement came after a Greenpeace protest at Exxon headquarters in Texas in 2002, during which 30 protestors entered Exxon's front lobby and climbed onto the roof of the company building.

Another NGO with which Exxon has had numerous confrontations is Amnesty International, which has concerned itself with Exxon's human rights and social responsibility record, continuously challenging the company to confront the issues raised by the number of reports and campaigns launched by the group. It has documented many cases around the world: "...where oil exploration and extraction is fueling armed conflict and contributing to human rights abuses, such as through the use of security forces to protect oil company staff and assets; violent repression of protest; and forcible displacement of large populations of local people."

One of Amnesty International's main goals was to persuade Exxon to develop and adopt a comprehensive and transparent human rights policy that included an explicit commitment to support and uphold the principles and values contained in the UN's UDHR. Amnesty International claims only to have a "small number" of shares in Exxon in support of its drive for shareholder activism. However, by working as a coalition with other like-minded shareholders, for example the Interfaith Center on Corporate Responsibility, the organization is able to multiply the impact of its shares many times over.

By adopting this strategy NGOs like Amnesty International have been able to engage in dialogue with Exxon concerning issues like human rights obligations. In the past, Amnesty International (in coalition with other investors) has moved Exxon to state publicly that it condemns human rights violations in any form and indicate its intent to uphold the core labor

standards set in place by the International Labour Organization (ILO). Furthermore, Exxon began participating in the voluntary principles on security and human rights as of 2008, as part of its own framework on security and human rights, something the company had earlier refused to do.

As a result Exxon must work alongside Amnesty International in trying to improve on issues such as developing a more comprehensive, transparent, and verifiable human rights policy (for more information see the "Social sustainability – Human rights" section of this brief).

Friends of the Earth is another environmental NGO to have launched a series of campaigns against Exxon. The most significant came in 2004, when Friends of the Earth published four reports on the company's contribution to climate change since 1882, claiming it to be the first time a company's carbon footprint has been calculated. In the reports Friends of the Earth claims that between 1882 and 2002 the carbon dioxide and methane emissions from Exxon's operations and the burning of its products totaled an estimated 20.3 billion tonnes of carbon, which amounts to around 5% of the world total.

Current CEO Rex W. Tillerson, has adopted a lighter approach to environmental issues than his predecessor Lee Raymond, but he remains refreshingly clear about Exxon's key mission – which he refers to as Exxon's "corporate social responsibility" – which is to continue supplying the world with fossil fuels. His statement was made when the heirs of John D. Rockefeller, the founder of the modern vertically integrated energy company, tried to persuade Exxon to increase its investment in renewable energy.

Ratings agencies

Exxon is included in the annual ratings of some of the world's leading indices that assess companies' economic, social, and environmental performance on behalf of investors, stakeholders, and the general public.

Exxon is not listed by many of the world's most recognized sustainability rating agencies, strongly suggesting that the company is underperforming in comparison to some of its industry peers such as BP and Shell, both of which feature strongly in the rankings for the 2010 Corporate Equality Index, Tomorrow's Value Rating, Goldman Sachs Environmental, Social, and Governance (ESG), and the Carbon Disclosure Leadership Index 2009.

Table 3: Ratings agencies			
Rating agency	Overview	Ranking	Comment
Tomorrow's Value Rating	Rankings are distinguished based on absolute sustainable value (SV) and relative return-to-cost ratio (RCR). Both rankings are conducted for the years 2001–03 and for a future performance scenario (2010).	46% (third place)	n/a
2010 Corporate Equality Index	The Human Rights Campaign Foundation's annual Corporate Equality Index (CEI) report provides an in-depth analysis and rating of large US employers and their policies and practices pertinent to lesbian, gay, bisexual, and transgender employees.	0 out of 100	"ExxonMobil continues to lose points for resisting shareholder pressure to amend its non-discrimination policies." CEI
Global100	Corporate Knights formed the Global Responsible Investment Network with three partners to create the Global 100 Most Sustainable Corporations in the World list. Companies are rated under categories including leadership diversity; energy/CO2/water/waste productivity; percentage of tax paid; and the level of sustainability leadership.	n/a	Not listed
Advance	Advance is an international project supported by the European Commission's (EC) LIFE Environment program. The SV concept allows Advance to assess sustainable performance similar to economic performance. It distinguishes between a ranking based on the absolute SV and relative RCR of 65 companies. Both rankings are conducted for the years 2001–03 and for a future performance scenario (2003–10).	n/a	Not listed
FTSE4Good	Designed to measure the performance of companies that meet globally recognized corporate responsibility standards, and to facilitate investment in those companies. Companies must meet the index's criteria on the environment, relationship with interested parties, supply chain labor, bribery, and human rights to be included. There is no ranking within the index.	n/a	Not listed
Goldman Sachs	The Goldman Sachs GS SUSTAIN ESG focuses on sustainable investing in the energy sector. Companies are rated according to 25 indicators across the categories of corporate governance, leadership, labor, communities and investment, and environment.	n/a	n/a
Carbon Disclosure Leadership Index 2009	The Carbon Disclosure Project is an independent not-for-profit organization. It was launched in 2000 to collect corporate information on climate change, and provides ratings for the 50 companies with the highest scores for climate change disclosure.	n/a	n/a
Dow Jones Sustainability Index	Launched in 1999, the Dow Jones Sustainability Indexes are the first global indexes tracking the financial performance of the leading sustainability-driven companies worldwide. Rates companies on a number of categories including biodiversity, corporate governance, environmental policy and management systems, social impacts on communities, social reporting, stakeholder engagement, and transparency.	Not published	n/a
n/a = Not available			
Source: Global100; 2009 Corporate; Equality Index; Tomorrow's Value Rating; Advance; Goldman Sachs; Carbon Disclosure Leadership Index 2009; Dow Jones Sustainability Index; FTSE4Good			

Within Exxon

One of the most important issues concerning Exxon's sustainable development is the wellbeing and happiness of its staff, not least because it is employees upon whom the company relies to achieve its objectives. Table 1 below gives an insight into what Exxon employees believe to be the pros and cons of working for one of the world's biggest companies.

Table 4: The pros and cons of working for Exxon in the eyes of the employees	
Average job rating as voted by past or present employees: 3.1 out of 5	
Pros	Cons
Above average compensation for the industry.	Lots of bureaucracy: heavily controlled business practices make it difficult to get things done.
Company stability.	Low morale in the workplace, sometimes leading to bullying.
Good opportunities to develop professionally (heavily depends on location).	Low quality leadership and a very rigid management structure.
Surrounded by intelligent people from various different cultures and ages.	Company pays on or below sector average in most of the positions.
Prestige of working for one of the world's most successful companies.	Limited progression once you have moved up the first couple of steps.
Big emphasis on work/life balance.	Ranking systems tends to pit people against one another and ends up being counterintuitive to a team environment.
International/travel opportunities.	Forced ranking sometimes lacks transparency/fairness.
Great place to learn and develop skills.	Employees have to fill out a risk assessment for all projects regardless of their value, which can hinder progress.
Professional atmosphere.	Far from an entrepreneurial working environment.
Exxon is a profit driven company, therefore it will retain, develop, and promote to maximize profit potential.	Outdated, paternalistic culture.
Vigorous health and safety policy.	Company politics often gets in the way of individual progress.
Source: www.glassdoor.com (based on 73 job reviews), last updated September, 2010	
DATAMONITOR	

Employee unrest can be extremely damaging, and can have an impact on a company's operational performance and its bottom line. However, shareholders are now becoming highly sensitized to sustainability issues and, as shareholder sentiment shifts, they can put more and more pressure on Exxon to change the way it operates. For example, in May 2002 human rights and environmental shareholder activists won an important victory at Exxon's annual meeting, when an equal employment opportunity shareholder proposal received 23.5% of the preliminary vote, an increase of 81% on the vote achieved for the same resolution in 2001. After the 2001 vote Exxon unsuccessfully appealed to the SEC to delete the resolution from the 2002 ballot, saying it had essentially complied with its terms.

Furthermore, at the company's annual shareholder meeting in May 2010, California-based sustainable investors As You Sow, which owns 16,746 Exxon shares valued at over \$1m, demanded a vote on the environmental risks of hydraulic fracturing for natural gas. This process is a key stage in the development and marketing of so-called "shale gas." None of Exxon's SEC filings highlighted the environmental or regulatory risks of hydraulic fracturing, or "fracking," so shareholders took the unprecedented step of filing their own report of the risks with the SEC.

Usually, new shareholder proposals like this only receive 5–7% of the vote but As You Sow's proposal received over 26% support, highlighting that mainstream investors in Exxon was already concerned over the environmental risks associated with fracking. After BP's oil spill in the Gulf of Mexico following the Deepwater Horizon explosion in April 2010, it is clear that oil companies can no longer expect to proceed with their business operations without greater transparency.

At the same annual meeting in 2010 Exxon faced its first ever shareholder resolution challenging the company to disclose more information about its controversial investments in Canadian oil sands projects. Oil sands projects are fast becoming an integral part of the company's future production plans, and as of 2009 they accounted for approximately 25% of Exxon's resource base. About 26.4% of investors voted in favor of a shareholder motion asking the company to produce a report detailing the financial risks associated with the projects. However, investors did not get the support of the board and Exxon executives advised shareholders to drop the vote against the proposal.

A year earlier, shareholders voted down green proposals that were backed by members of the Rockefeller family who warned that the company would not survive if it failed to diversify away from fossil fuels. As reported by the *Independent*, chairman and CEO Rex W. Tillerson told them that oil and gas will continue to be world's dominant fuels, meeting nearly two-thirds of global energy needs until at least 2030. Shareholders subsequently voted down a number of proposals aimed at making Exxon focus more heavily on green issues.

Sustainability challenges in the oil and gas industry

The sustainability challenges facing any oil and gas major are going to be sizable to say the least, but as global sentiment shifts in favor of far more environmentally friendly and socially responsible ways of pursuing energy resources it has never been more important for Exxon to not just act on sustainability, but communicate clearly exactly how it is meeting various sustainability challenges.

Through a combination of low-carbon energy investments and researching and developing ways to extract energy resources more efficiently and with less impact on the environment, Exxon insists that sustainable development remains central to its day-to-day business operations.

When reporting its sustainability performance, Exxon must adhere to IPIECA and Global Reporting Initiative (GRI) guidelines. However, IPIECA is the only association representing both the upstream and downstream oil and gas industry and was established as a result of the formation of the UN Environment Programme (UNEP). As such, IPIECA remains one of the major communication channels between the industry and the UN.

Its role is to represent all areas of the global oil and gas industry in terms of social and environmental responsibilities and to develop, share and promote sound practices and solutions. The association acts as a forum for the industry that aims to encourage the continuous improvement of sustainability performance and provide an overview of the sustainability challenges facing the oil and gas industry in general.

Table 5: IPIECA sustainability guidelines		
Environmental	Social	Economic
GHG emissions	Human rights	Transparency of payments to host governments
Air pollutant emissions	Security and human rights	Public advocacy and lobbying
Energy use	Labor practices, health, and safety	Preventing corruption
Other energy sources (alternative energy/fuels)	Workforce health and employee engagement	Local procurement and supply chain development
Flared gas	Workforce participation	Preventing corruption in the supply chain
Biodiversity	Occupational injury and illness incidents	Communication of financial data
Fresh water use	Process safety	
Spills	Training and development	
Discharges to water	Product responsibility	
Waste	Social investment and community impacts	
	Local content and local hiring practices	
	Involuntary resettlement and indigenous peoples	
	Human rights in the supply chain	

Source: IPIECA

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ASSESSMENT OF EXXON'S SUSTAINABILITY EFFORTS

Exxon and reporting

Each year Exxon publishes a Summary Annual Report, a CCR, and a Financing and Operating Review.

Exxon's 2009 Corporate Citizenship Report (CCR) is produced in accordance with the reporting guidelines and indicators of the IPIECA and the American Petroleum Institute's (API) *Oil and Gas Industry Guidance on Voluntary Sustainability Reporting* (April 2005). The API is the only national trade association that represents all aspects of America's oil and gas industry, has almost 400 corporate members, and has led the development of petroleum and petrochemical equipment and operating standards for more than 75 years.

Exxon also states that the majority of what it reports in its CCR cross-references the Global Reporting Initiative's (GRI) *G3 Sustainability Reporting Guidelines*. The GRI was set up in 1997 in partnership with the UNEP, and since the release of its more stringent G3 guidelines in 2006 Exxon has had to adapt to the updated principles. Updates included principles to define report quality: balance, comparability, accuracy, timeliness, reliability and clarity. In its 2009 CCR Exxon invites readers to download both the IPIECA/API and GRI guidelines, but there is no mention of the company's GRI score, unlike in the sustainability reports of other oil majors. For example, Royal Dutch Shell's 2008 and 2009 sustainability reports both received a GRI A+ rating, the highest available score.

Exxon reports its emissions to the Carbon Disclosure Project (CDP) which then goes on to produce its annual Global 500 Report. Somewhat surprisingly, Exxon does not mention its listing in the CDP report in its own CCR other than directing readers to the company's response to the CDP's information request.

Exxon is not a signatory of the UN Global Compact; however, the company claims that its 10 principles on human rights, labor standards, environment, and anti-corruption are intrinsic in its own standards of business conduct.

At the back of Exxon's CCR is an "Assurance Statement." The company commissioned Lloyd's Register Quality Assurance, Inc (LRQA) to independently verify the processes used in creating the report and to evaluate consistency with the IPIECA and API guidelines.

Each year Exxon solicit feedback on its CCR from an external assessment panel and then use this feedback in its reporting process the following year. All external experts come from outside Exxon, and do not undertake any form of endorsement or validation exercise of Exxon's policies and procedures. Exxon then incorporate panel suggestions on improving its CCR, and in addition to reviewing the final report, the panel is also asked to comment on an early draft of the report and provide feedback on the company's materiality analysis.

Indeed, all Exxon reports are supported by the substantial amount of information and supplementary documents available on the company's online presence.

Exxon's "View to 2030"

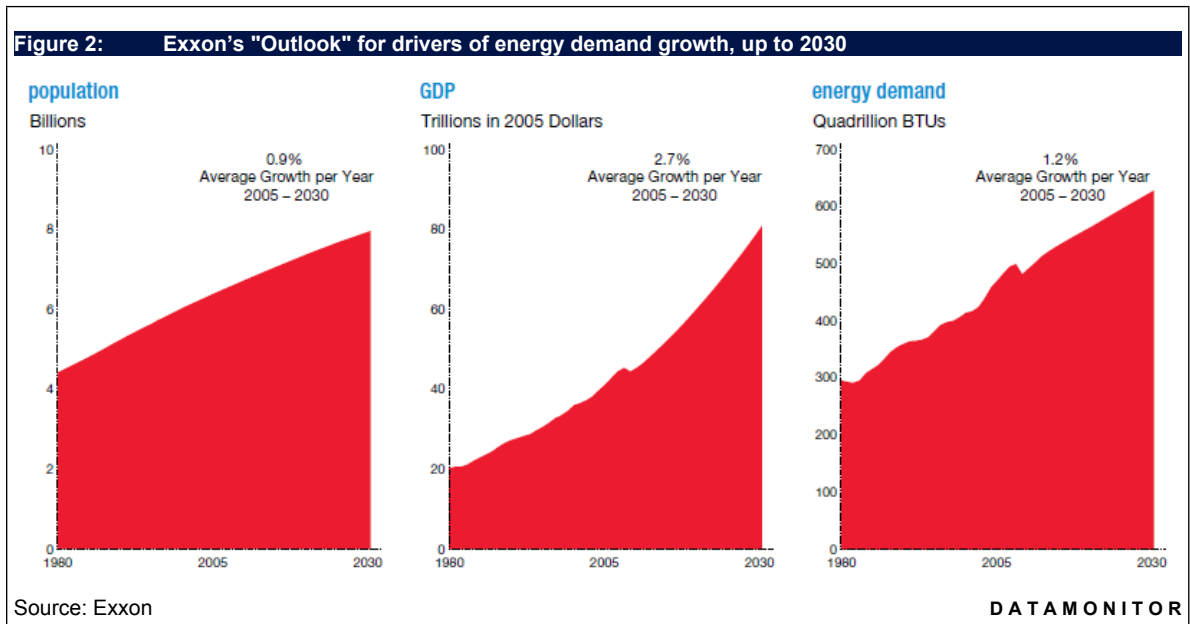
Every year Exxon produces its Outlook for Energy, which takes a long-term look at the future challenges presented by global trends in energy demand, supply, emissions, and technology as a means of directing company investment decisions. In the 2009 outlook the company observes a good opportunity for strong economic growth, improved living standards, and innovative technological breakthroughs, but Exxon also envisages huge challenges. The major challenge according to

Exxon, and a key theme running throughout the majority of the company's available literature, is the need to meet the world's rapidly growing energy requirements to "support and expand prosperity," while at the same time trying to lessen the impacts of energy use on the environment.

The key finding in Exxon's most recent outlook is that global energy demand in 2030 will be almost 35% higher than it was in 2005 – even with the considerable gains in energy efficiency – chiefly driven by growth in developing nations like India and China, where energy use is expected to rise 65%. Here, Exxon sees itself playing an important role in providing reliable, affordable energy. Exxon insist the response to this challenge will require an integrated solution and trillions of dollars worth of investment (more information on Exxon's "integrated solution" can be found in the "Environmental sustainability" section of this brief).

IEA data suggest that 97% of future fuel demand growth will come from the transportation sector, and Exxon's own research supports these findings. Exxon's Outlook pertains to the fact that transportation will remain a predominant source for oil demand through 2030 because nearly all the world's vehicles run on liquid fuel. But Exxon believe that developments in the transport sector will mean that global energy demand for light-duty vehicles will flatten over the next two decades as an increasing number of alternative fuel vehicles (AFVs) enter the market. However, demand from heavy-duty vehicles will grow, which Exxon claims will be symbolic of economic growth on a global scale, as the shipment of goods increases. Exxon predicts that by 2030 aviation and marine vehicles will become the most significant source of transportation demand growth for liquid fuels, with non-OECD nations accounting for all the growth in global transport demand.

Another long-term trend identified by Exxon is that power generation will account for around 55% of total energy demand growth between 2005 and 2030, largely thanks to rapid development in non-OECD countries. Figure 3 shows how the increase in global population and GDP since 1980 will drive energy demand to over 600 quadrillion British thermal units (BTUs) by 2030. However, a hugely important issue for any energy company harboring sustainable ambitions is to develop the capacity to produce energy from less carbon-intensive sources, and Exxon insist that by 2030 "alternative" fuels such as nuclear, natural gas, and renewables will play an ever important role in meeting demand.



Exxon identifies natural gas as a growing force in meeting future energy demand, a clear indication of company plans to increase investment in the sector over the coming decades. The energy industry is agreed on the fact that over the next 20 years fossil fuels, including natural gas, will account for approximately 80% of demand as they remain the most convenient and affordable energy sources available on the scale required. Despite oil continuing to account for the largest share through 2030, Exxon sees natural gas overtaking coal and becoming the second largest contributor to global energy supply. It believes that by 2030 global demand for natural gas will increase by around 55%. Although not quite making the same contribution to emissions reductions as technologies like solar and wind, natural gas is 50–70% more efficient than coal and will act as a good transition fuel before renewables are better placed to support our needs. Exxon also predicts an increasingly important role for unconventional gas (such as shale) and nuclear power.

The company's outlook forecasts that wind, solar, and biofuels will grow at a rate of 10% a year up to 2030, but due to demand growth their share of total global energy will not surpass 2.5%.

According to Exxon, by 2030 global CO2 emissions are likely to have risen by about 25% from 2005 figures, but the rate at which energy demand grows will be significantly higher. The company's outlook emphasizes the difference between emissions from OECD and non-OECD nations, whereby the emissions produced by non-OECD nations surpassed those produced by the OECD in 2004, and over the coming decades will account for two thirds of all emissions. However, the progress made by OECD nations in curbing emissions is considerable. Exxon conclude that OECD emissions have now peaked, and will fall by 15% by 2030, dropping to levels similar to those in 1980. Considering that economic output from OECD nations will have tripled between 1980 and 2030, and population will have grown by 30%, Exxon see this as a "noteworthy achievement."

Exxon's outlook is updated annually and is shared publicly in order to "encourage better understanding of the scale and nature of global energy challenges."

Environmental sustainability

Greenhouse gas emissions and air pollutant emissions

One of the major challenges facing any IOC is addressing the balance between the need for energy and economic development while mitigating environmental risk, particularly reducing GHG emissions from its operations. However, Exxon claim to be meeting this challenge head on, and insist that it wants to deliver the energy resources needed to ensure global progress – but not at the expense of future generations. Exxon says that meeting the energy challenges requires "integrated solutions" such as expanding supply, increasing efficiency, and mitigating emissions. Exxon plans on investing more than \$125bn over the next five years towards the development of future supplies of environmentally friendly energy. The company also plans to invest in the development and security of the communities that are affected by its operations. Exxon's three steps towards meeting the energy challenge involve:

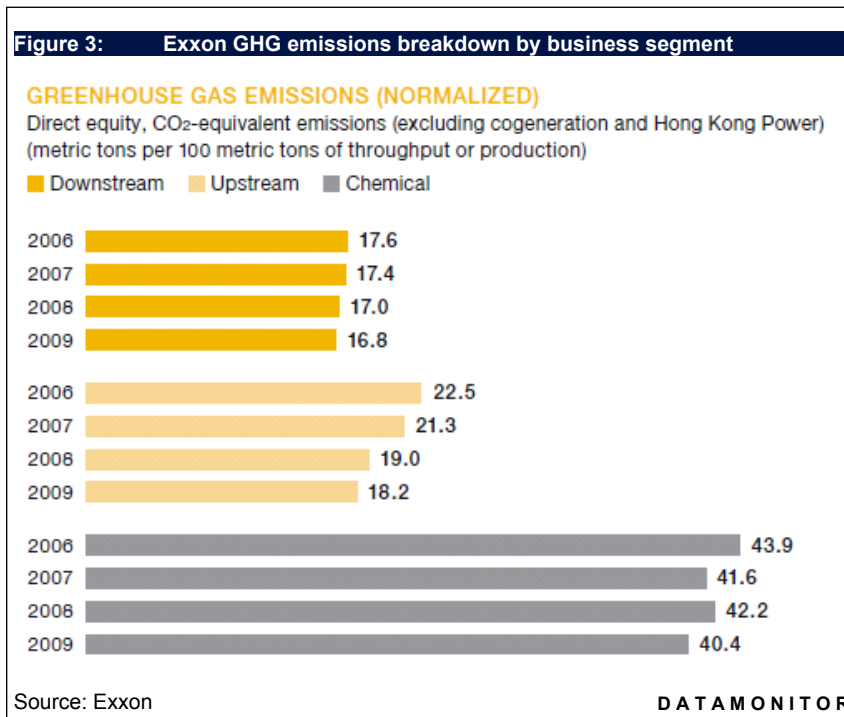
- **Expanding supply** – Developing new technologies that will enable Exxon to diversify energy supplies and deliver them efficiently to all corners of the globe with less environmental impact.
- **Increasing efficiency** – Doing the same or more, with less. This will save on fuel costs, reduce emissions, and also slow growth in energy demand. Exxon will focus on extending as well as expanding energy supply.
- **Mitigating emissions** – Since 2004 Exxon has invested \$1.9bn in activities such as cogeneration that help to reduce GHG emissions and improve the energy efficiency of its operations. Exxon says that as part of its "worldwide efforts" to reduce emissions it seeks to improve its own efficiency while advancing proven emissions-reducing technology and developing breakthrough technologies for the long term.

Exxon insists that it is committed to decreasing its energy intensity, pursuing a long-term view on advancing low-carbon energy technologies, and supporting effective national and international policies in order to reduce not just its own GHG emissions, but also those of individual end-users.

Exxon is entitled to insist that action on GHG emissions must come from individuals and governments as well as private enterprise. Their own focus will be on reducing emissions from their own operations. For Exxon, this involves reducing wasteful flaring both in upstream operations and at refineries, cogeneration of power and steam, and improving energy efficiency. Since 2005 the company has invested \$1.3bn in activities related to cutting emissions and improving efficiency; although this might seem modest considering that said amount accounts for less than 1% of its overall revenue during the period, it is the results that count. Exxon reports its GHG emissions on a direct equity basis for all of its business operations. This captures the company's percent ownership in an asset. Sites that are jointly owned with partners but are 100% operationally controlled by others are included in its equity calculation (at the appropriate Exxon share of ownership), and emissions reductions here have not been very significant, with only a 2% reduction in GHG emissions between 2008 and 2009. Exxon attributes this fall to actions taken in 2009, such as reducing upstream flaring and an increase in efficiency at its refining facilities.

Other indicators are more positive. In 2009 Exxon's combined emissions of volatile organic compounds (VOCs), sulfur dioxide (SO₂), and mono-nitrogen oxides (NO_x) decreased 14% from 2008 and 36% from 2005 levels. The company has made a voluntary commitment to reduce combined emissions of SO₂ and NO_x from its US refineries by 2012 by as much as 70% compared to 2000 levels; according to Exxon's 2009 CCR, it is on track to meet this target. By the end of 2009 its US refining facilities achieved a more than 65% cut of combined NO_x and SO₂ emissions compared to 2005.

Exxon's indirect emissions from purchased electricity and steam from its equity operations were estimated to be 15 million metric tons.



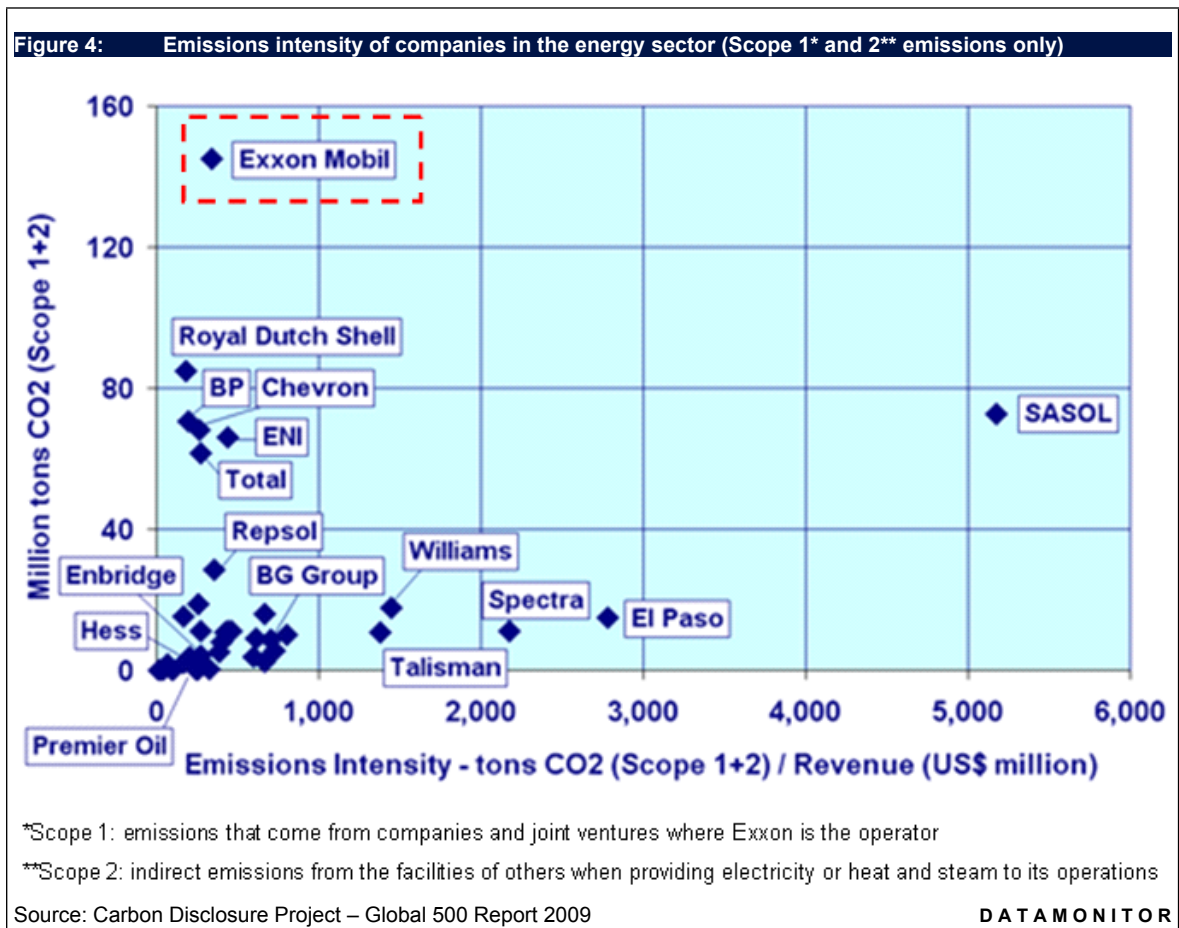
Exxon does not calculate emissions produced from the usage of Exxon products (oils and lubricants, gasoline for motorists etc.) suggesting that helping its customers reduce their own emissions by producing cleaner products may not be a priority. On the other hand, it can be said that Exxon is leaving it to corporate and individual consumers to moderate their own use of fossil fuel-based products. Exxon's method of measuring its GHG emissions in metric tons per 100 metric tons of throughput or production clearly shows that the company's chemical business is by far the least energy efficient – accounting for more than 50% of overall emissions – and is the only business segment to show an annual increase in emissions between 2007 and 2008. Therefore Exxon must start prioritizing the reduction of emissions from its chemical business.

Both the upstream and downstream arm of Exxon's business have shown a continuous decrease in emissions, but this has been relatively small, with the biggest reduction between 2006 and 2009 coming from its upstream segment, falling approximately 20%.

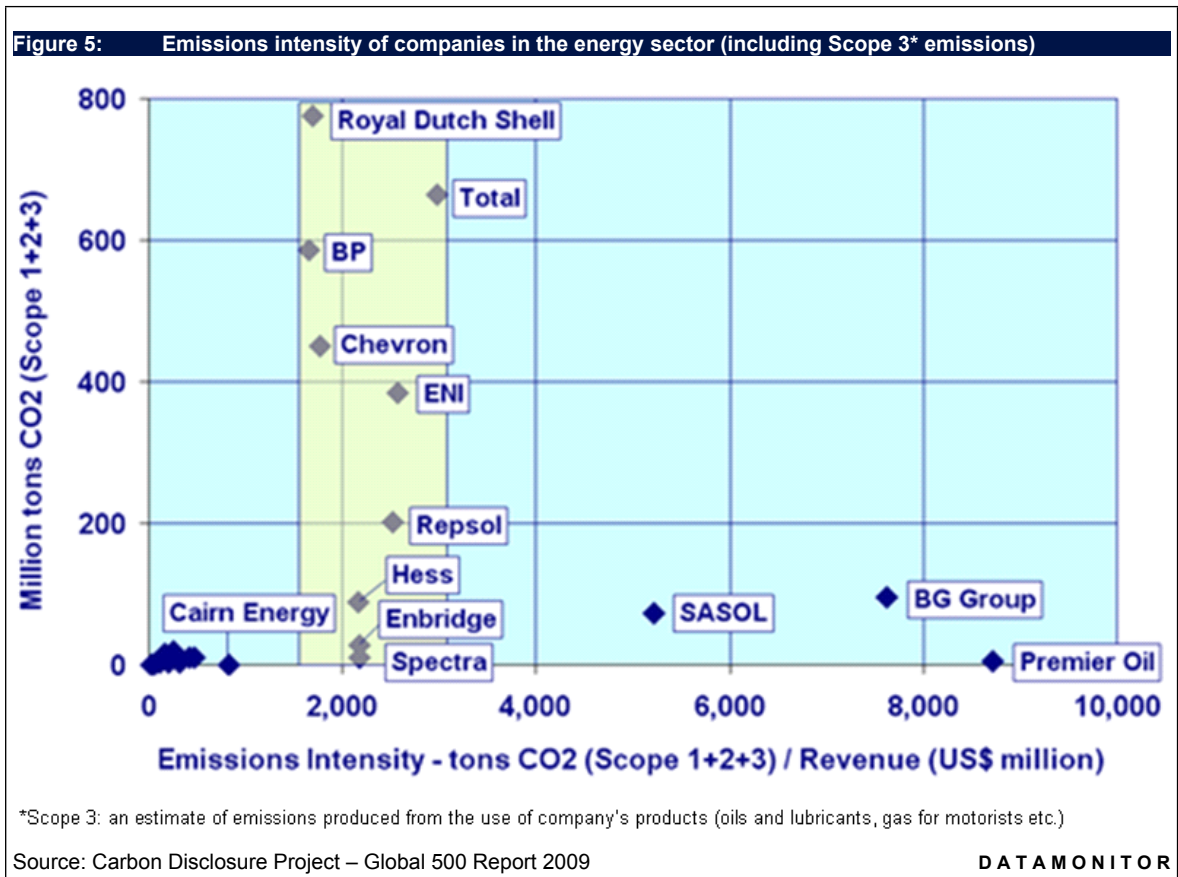
Overall, Exxon's reputation regarding its approach to GHG emissions remains relatively poor. As recently as April this year the US Environmental Protection Agency (EPA) ordered two Exxon subsidiaries, Mobil Oil Guam Inc. and Mobil Oil Mariana Islands Inc. to pay \$2.4m for allegedly violating the federal Clean Air Act by failing to control emissions from their facilities. The US Department of Justice claimed that Exxon had illegally discharged hundreds of tons of VOCs into the air every year

at its bulk gasoline terminals on Cabras Island in Guam. Exxon had failed to install necessary vapor pollution controls; they also failed to comply with pollution limits, failed to install pollution monitors, and failed to submit required reports.

It is clear from Figure 4 that compared to its peers, Exxon is not doing enough to curb its emissions, and its research and development (R&D) spending is not high enough, because the company produced almost double the amount of CO₂ compared to competitors such as BP and Shell,



When Scope 3 GHGs are included into a company's calculations, many of the oil majors fall between 1,500 and 3,000 tons of carbon dioxide/\$m of revenue (Figure 5). Quite clearly, the inclusion of Scope 3 gases significantly increases the total volume of reported emissions. According to the CDP this supports previous data from research carried out by Carnegie Mellon University, Pennsylvania that suggested Scope 1 and 2 emissions from US industries represented approximately 25% of the gases released in supply chains.



The fact that Exxon is not represented in Figure 5 suggests that the company has either not reported or underreported its Scope 3 emissions. The way each company calculates and reports its emissions varies considerably, which could lead to a firm underreporting its emissions levels. For example, using a subsidiary to take emissions off the books of the parent company could lead to a misrepresentation of emissions data.

However, if Scope 3 emissions (those produced from the use of a company's products) account for such a significant share of a company's emissions production, then to a large extent they are out of Exxon's hands. It is acceptable that Exxon remains in full control and must take full responsibility for the emissions produced from its exploration and production operations, refineries, and petrochemical plants, but it is more difficult to manage the GHGs produced from the use of its products once they leave Exxon facilities. It can play its part by producing clean burning liquid transport fuels, for example, which it currently is doing, but both individual and enterprise consumers also own a share of the responsibility to reduce overall emissions, of which oil majors' Scope 3 emissions are a fundamental part.

As Exxon strives to keep its upstream business profitable it faces a significant emissions challenge. As it pursues unconventional oil and gas resources, such as tar sands and shale gas, the development of new fields becomes more energy intensive, making it harder to control emissions. As a result of more projects coming on-stream, it is highly likely that

Exxon's GHG emissions will rise over the next few years. Furthermore, Exxon's existing fields continue to age and become increasingly inefficient.

Exxon seems to favor taking a piecemeal approach to tackling emissions rather than meeting the problems head on by increasing the amount it invests into making lowering GHG emissions an integral part of its business.

Flaring

Exxon claims to have achieved a 23% reduction in gas flaring in 2009 compared to figures for 2008, and the average daily flaring of 445mcf/d was down 43% from 2005 levels. There are places where Exxon still conduct high levels of flaring because it is deemed necessary for technical and safety reasons; 80% of the company's flaring occurs in Nigeria and Equatorial Guinea. Even so, Exxon has achieved flaring reductions of 55% in Nigeria and 40% in Equatorial Guinea. In the downstream sector, Exxon currently has flare gas recovery design projects at its Beaumont, Texas (345,000bpd), Billings, Montana (60,000bpd) and Chalmette, Louisiana (193,000bpd) refineries in the US, due to be completed in 2012. However, all three of these refineries have experienced a serious fire in the last three years.

Exxon's 2009 CCR explains why the company cannot phase out gas flaring all together, stating that "commercial alternatives for associated gas require a business environment with the right conditions, including available markets, infrastructure investments, fiscal terms, and appropriate regulations – currently not available in many countries. Gas is flared only when all options to utilize the associated gas have been exhausted."

If Exxon was willing to spend more capital on addressing gas flaring then they may not exhaust their alternatives so quickly. For example, other IOCs have entered into joint ventures with national governments to develop extensive gas-gathering technology, helping to cut continuous flaring. Such technology can then use this associated gas to provide energy to local domestic markets, although it is fair to point out that gathering the gas is one thing; moving it to domestic markets requires significant investment in local infrastructure, and this is not always easy to achieve.

Carbon capture and storage

For many years Exxon has been an industry leader in the development and use of component technologies essential for carbon capture and storage (CCS), and in 2009 it was the biggest owner of patents for CCS, holding twice as many as second-placed Shell. CCS appeals to the extraction element of any oil company's business operations because the technique of injecting CO₂ into the earth has been used for many years to help extract oil from depleted wells. However, according to the UK's Royal Institute of International Affairs, Exxon is in fact ranked highly for the four patent categories related to capturing carbon, such as absorbent methods and membranes.

Figure 6: CCS top patent holders

Rank	Assignee	No. of patents
	Total	9,160
1	ExxonMobil	978
2	Shell	414
3	UOP Inc (Honeywell Subsidiary)	223
4	Air Products And Chemicals Inc	180
5	Texaco Inc	120

Source: Chatham House DATAMONITOR

Exxon has invested significant capital into developing CCS pilot projects. At the end of 2008 the company announced plans to spend \$70m on a project to capture and store 6 million metric tons of CO₂ annually from its natural gas plant in La Barge, Wyoming (which has been capturing, transporting, and selling CO₂ since 1987), an increase of 50% from the current plans for four million tons per year. This came in addition to plans announced in the same year for \$100m to be spent on developing and testing an improved natural gas treating technology for CO₂ removal called "controlled freeze zone" (CFZ). CFZ is a single-step cryogenic separation process technology that makes capturing and storing carbon more affordable, and opens up vast new sources of natural gas by separating carbon and other impurities from natural gas more efficiently, and discharging the CO₂ as a high-pressure liquid, ready for injection into underground storage.

Exxon is also involved in a number of programs supporting research and development into CCS, such as the Global Climate and Energy Project (GCEP) at Stanford University, CO₂ReMoVe, the US Department of Energy's Regional Carbon Sequestration Partnership Program, the International Energy Agency's Greenhouse Gas R&D Programme, and the Gulf Coast Carbon Center, as well as research at the Georgia Institute of Technology, the University of Texas, and the Massachusetts Institute of Technology (MIT).

Gasification

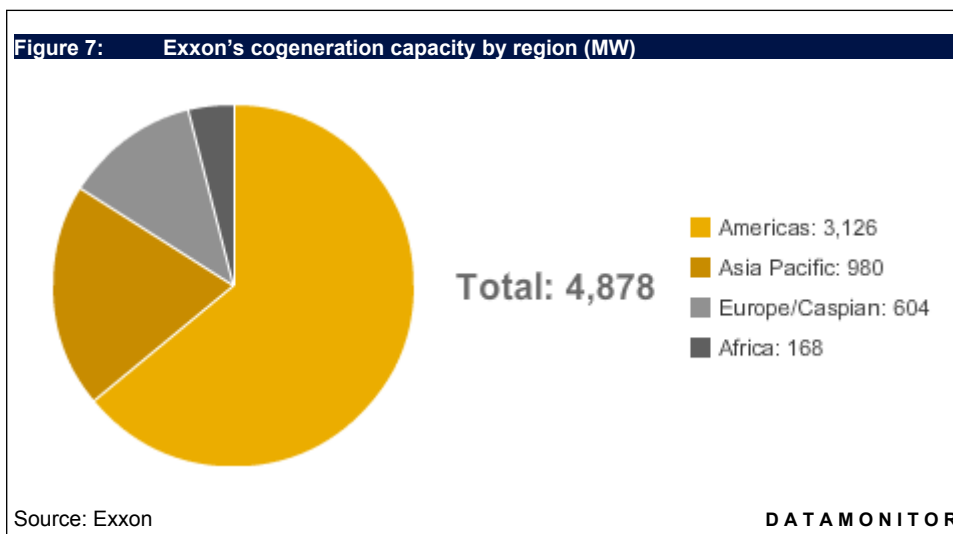
Gasification is the process of converting feedstocks that contain carbon (i.e. coal, coke, or biomass) into synthesis gas which can then be used to produce electricity or converted into chemicals or transportation fuels. Exxon is actively involved in developing next generation technology for this process.

Its goal is to improve efficiency and reduce the cost of gasification. According to the company website, when combined with CCS, increased use of gasification could reduce greenhouse-gas emissions associated with coal.

Exxon also claims to be involved with other proprietary technologies capable of converting synthesis gas or methanol produced from synthesis gas to transportation fuels, lubricants, and chemicals, but does not specify what technologies are involved.

Cogeneration

Cogeneration works in the same way as the combined heat and power process (CHP), in that electricity and useful heat or steam are produced simultaneously for industrial purposes. Exxon has interests in approximately 4900MW of cogeneration capacity in over 100 installations at more than 30 locations around the world, producing enough capacity to supply electricity for more than two million US homes.



The most effective way to utilize cogeneration capacity is at refining facilities, where energy consumption accounts for around 50% of operational costs and inefficiency is still a big concern. One of Exxon's newest high-efficiency cogeneration plants is Antwerp in Belgium, where the technology helps the plant to use 12% less fuel. In addition to generating 125MW, the new plant will reduce Belgium's carbon dioxide emissions by approximately 200,000 tons per year, the equivalent of removing about 90,000 cars from Europe's roads.

Additional new facilities in Singapore and China will increase Exxon's cogeneration capacity to more than 5000MW in the next three years.

Energy use and efficiency

It seems paradoxical to suggest that an energy company is an advocate of energy efficiency, as it is the use of energy that drives its profits. For companies like Exxon, however, it has been clear for some time that there is a direct correlation

between its own use of energy and its bottom line. Put simply, the less energy used, the less GHGs produced and the more money saved. This rule applies throughout the entire energy supply chain right down to the individual end users.

According to Exxon figures, gains in energy efficiency through 2030 will curb energy demand growth by approximately 65%. Exxon's own goal is to have improved the efficiency of its global refining and chemical operations by at least 10% between 2002 and 2010. Third-party benchmarking of the company's energy intensity indicates that Exxon consistently operates more efficiently than the industry average. Exxon identifies reliability as the major challenge to energy efficiency at its manufacturing plants. Optimal energy use can only be achieved if plants are running reliably, as unplanned downtimes cause inefficient use of energy. Unplanned downtimes can occur as a result of extreme weather conditions and natural disasters, and remain a real challenge for energy companies hoping to become more energy efficient, because a large amount of extra energy is required to restart a plant after a shutdown. Exxon manages this through its global reliability system, part of Exxon's operations integrity management system (OIMS).

Since 2000, Exxon has used its Global Energy Management System to systematically identify and address operational efficiency opportunities. As a result the company has identified ways to improve energy efficiency at refineries and chemical plants so as to reduce costs by 15–20%. Over 60% of these opportunities have been acted upon to date. In 2009 the company's operations consumed approximately 1.47 billion gigajoules (GJ) of energy, its best ever year for energy efficiency in its refining and chemical operations. One example highlighted by Exxon in its 2009 CCR and on its website is its Port Dickinson refinery in Malaysia, which was able to achieve a 6% improvement in efficiency from 2008 to 2009 by optimizing unit operations through online energy monitoring tools, improving heat exchanger monitoring, and revising heat exchanger cleaning procedures (this is now becoming standard practice in the industry as companies put operation optimization at the core of their business).

However, despite the well documented success stories in Exxon's published literature regarding the efficiency of its refineries and chemical plants, the company is reluctant to acknowledge its failings. In July 2010 it was announced that Exxon would be sued by two environmental groups, the Sierra Club and Environment Texas, over the release of large amounts of air pollutants from its Baytown, Texas, oil refinery, the biggest in the US and sixth biggest in the world, with a crude oil processing capacity of 577,000bpd.

On November 30, 2009 the two environmental groups sent Exxon their first notice of intent to sue under the provisions of the US Clean Air Act for more than 400 instances of equipment malfunctions, breakdowns, and other non-routine incidents at Baytown over the previous five years. These instances, known as emissions events, resulted in the company releasing millions of pounds of pollutants into the air in violation of the company's permits containing hourly limits.

Improving efficiency was one of the three main goals identified by Exxon as key to ensuring a safe and secure energy future in its 2009 Outlook for Energy. It envisages global emissions of CO₂ rising by an average of 0.9% each year through to 2030, with all of it coming from emerging economies. Throughout Exxon's published literature and web content, the promotion of energy efficiency as a tool for curbing global energy demand growth is a constant.

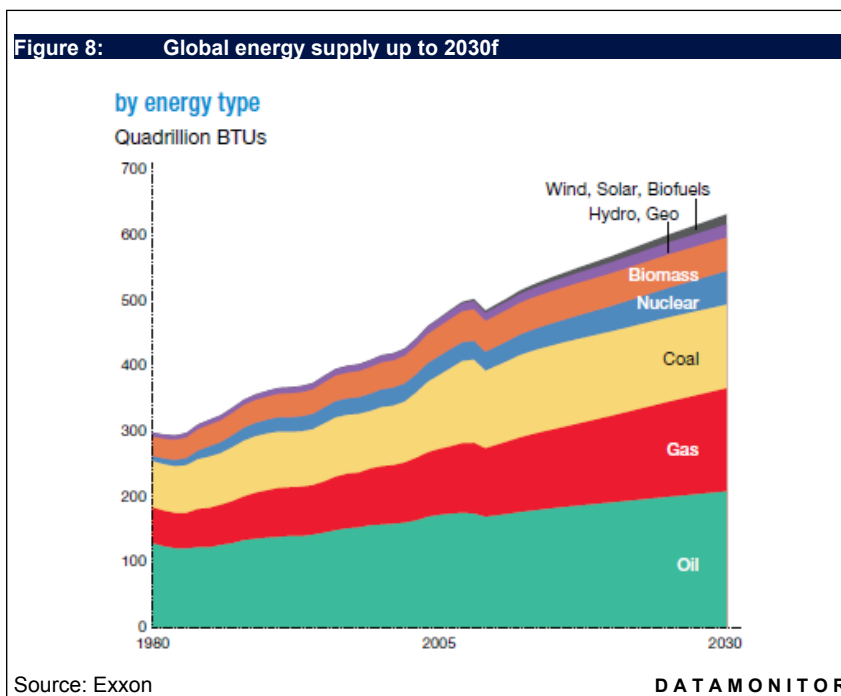
"To see how energy efficiency works to curb energy demand growth, imagine if the world's economies grew as projected through 2030, but efficiency was held flat at 2005 levels. In that case, global energy demand in 2030 would not be almost 35 per cent higher than in 2005, as we currently project; it would be about 95 per cent higher. Put another way, gains in energy efficiency through 2030 will curb energy demand growth through 2030 by about 65 per cent."

Other energy sources (alternative/unconventional energy and fuels)

Today, fossil fuels generate 80–85% of energy generation, and in 2050 hydrocarbons are expected to account for about 60% of power generation. In the meantime, global electricity demand is forecast to more than double, meaning that alternative, low-emission energy sources will need to make up around 40% of a much higher level of power generation. This huge growth rate presents an enormous challenge for a company like Exxon, which has a strong desire to remain an energy supply market leader, even as the world's energy mix changes.

In 2009 Exxon participated in eight major start-up projects, and an additional 54 major projects are in various stages of planning, design, and execution from a total portfolio containing over 130 major oil and gas projects.

Figure 7 shows how important Exxon believe oil, gas, and coal will remain through 2030. However, fossil fuel resources are becoming increasingly hard to access and bring to market, and there are legitimate questions as to whether this anticipated level of conventional fuel supply is achievable. As the Figure below shows, the combined market share of non-conventional energy is climbing slowly, but the pace has already started to pick up, and by 2030, it is evident that they will become more important in terms of global energy supply.



Deep-water drilling

As of 2010 conventional resources (i.e. crude oil and natural gas) make up 25% of Exxon's resource base, located both onshore and in shallow water offshore. However, the company has an increasingly diverse global portfolio of deepwater resources, covering approximately 49 million net acres. Exxon has interests in 24 major deepwater projects onstream in the

Gulf of Mexico and offshore from West Africa and Norway, with a combined net production of approximately 460,000 barrels of oil equivalent per day (boe/d). Advances in technology have allowed Exxon to develop oil and gas in extreme deepwater areas, inaccessible only a generation ago. Today, Exxon is capable of building a floating production, storage, and offloading (FPSO) vessel that can operate in water depths of over 5,000ft.

Recent technological advances have allowed Exxon to remain an industry leader in deepwater oil and gas exploration and production, and over the past five years the company has added an average of 3.1 billion barrels of oil equivalent to its resource base each year.

The drive to produce oil and gas from ever more challenging frontier environments, such as extreme deep ocean water, requires increasingly intensive extraction techniques, while also exposing the company and its employees to serious danger. Powerful hurricanes on the surface threaten the lives of those working onboard the platform, while below the surface extreme pressures and near-freezing temperatures pose immense challenges to expensive equipment. Such resource-intensive projects require billions of dollars of funding even before oil is struck, so any delays in operations from government moratoriums or the hurricane season have a serious impact on profitability.

On April 20, 2010, an explosion aboard Transocean's Deepwater Horizon drilling rig in the Gulf of Mexico resulted in the death of 11 rig workers. The rig, leased by BP, sank to the bottom of the ocean two days later and for most of the summer of 2010 huge quantities of crude oil spilled into the water from the stricken well. In light of this spill and the resulting moratorium on offshore drilling imposed by President Obama – extended in early December 2010 to 2017 for some key areas of the Gulf – Exxon's planned offshore production growth is under threat.

In July 2010 Exxon CEO Rex W. Tillerson told a congressional panel that the oil industry is "not well equipped" to deal with deepwater spills like the one suffered by BP. Tillerson told Democratic representative Bart Stupak of Michigan, "that's why our emphasis has always been on preventing these things from occurring: because we're not well equipped to handle them, and that's just a fact of the enormity of what we're dealing with."

However, Exxon has always strongly defended the industry's record in deepwater drilling. In the months after the spill Exxon even launched a blogging website, "ExxonMobilperspectives.com," where the company looked to encourage dialogue about the issue. The website has been used by Exxon to present its case to the public for continued drilling in the deepwaters of the Gulf of Mexico and beyond.

Exxon point out that the scale of the Deepwater Horizon disaster was an industry one-off, and nothing similar has been experienced at the 14,000 other deepwater wells that have been successfully drilled around the world. Exxon stressed the crucial role the Gulf of Mexico plays in US energy security, accounting for 24% of US oil production and for 17,000 jobs.

According to some estimates, within the next five years global deepwater oil production is expected to rise to 10 million bpd – total world oil production will be about 90 million bpd at that time.

Oil sands

In its own words Exxon has an "extensive portfolio of very high-quality oil sands resources," and its interest in Canada's bitumen resources in Alberta is growing all the time. The process of extracting bitumen embedded in sand and clay is

extremely energy intensive, and in-situ wells require huge volumes of fresh water, but this unconventional source of oil will become increasingly important to supplying the world's demand for oil in the coming decades.

Exxon's oil sands operations are wholly conducted by 70%-owned Canadian subsidiary Imperial Oil Ltd. Imperial holds about 465,000 acres of oil sands leases, and operates the Kearl mining operation and Cold Lake in-situ project, while also holding a 25% share in the world's largest producer of crude oil from oil sands, Syncrude Canada.

Alberta is estimated to hold about 175 billion barrels of tar sands reserves in addition to its 33 billion barrels of conventional oil. To put this in perspective, the largest conventional crude oil reserves in the world are the 265 billion barrels found in Saudi Arabia; therefore, it can be argued that if Canada is able to develop a large proportion of its tar sands reserves then it can be mentioned in the same breath as the Middle East nation. For many years the reserves were neglected, except by local companies, due to high extraction costs. Since 2000 a combination of technological advances and rising crude oil prices have made the exploitation of Canada's tar sands resources more economically viable, and have attracted the attention of some of the world's largest multinational oil companies.

The environmental challenges and high financial risks associated with such development makes the process highly unpopular among some Exxon shareholders and environmentalists alike.

In 2009 Imperial announced it was going ahead with a \$7.1bn first phase of the 100% Exxon-owned Kearl oil sands mining project in Alberta. The first phase of the project will eventually produce an average of 110,000 bpd starting in late 2012, and could ultimately produce more than 300,000 barrels a day from reserves estimated to exceed 4 billion barrels.

This was in addition to Exxon acquiring a 50% interest in 33,000 acres of high quality oil sands resources in Athabasca, Canada.

Liquefied natural gas

One of the key aspects of Exxon's plans to becoming more sustainable is its increasing interest in natural gas. As greater emphasis falls on using cleaner energy, natural gas will become more and more important to the challenge of meeting demand and curtailing emissions. Despite predictions suggesting that oil will continue to account for the largest share of world energy demand through to 2030 (in 2009 oil accounted for 35% of total energy demand with coal at 29% and natural gas at 24%) Exxon sees natural gas overtaking coal and becoming the second largest contributor to global energy supply.

LNG delivers cleaner-burning natural gas from remote production locations to the markets where additional imported supplies are needed. Prior to the birth of the modern LNG industry natural gas was moved by pipelines and there were many practical difficulties in extending networks ranging from topography to politics. The logistical flexibility of LNG helps improve the security of supply worldwide. Exxon has been involved in LNG for more than 35 years, leaving it well placed to lead the market in the industry, as its regional markets in Asia, Europe, and North America begin to be linked with multiple supply options.

Exxon is involved in projects in Qatar and Indonesia that supply LNG to key Asian, European, and US markets. LNG supplies from Qatar have increased significantly, and today it is by far the largest exporter of LNG in the world.

Exxon is also a 25% foundation partner in the Gorgon natural gas project, 130km off the Western Australian coast. The project will ultimately encompass 11 gas fields containing an estimated total recoverable resource in excess of 40tcf of

natural gas. This represents around 25% of Australia's known gas resources. Although unpopular with environmentalists, the project's sustainability credentials are helped by a forecast that over the life of the project up to \$33bn will be spent on local goods and services; around 10,000 people will be employed at peak construction and \$40bn in additional revenue will be generated for state and federal governments.

But as the scale of LNG projects increases, sustainability issues are bound to arise. For example in September 2010 villagers in Papua New Guinea attacked Exxon's LNG project, burning heavy machinery and using high-powered weapons to damage construction equipment. The attacks were part of ongoing land disputes within the footprint of the \$15bn, 6.6 million tons per year (tpy) Papua New Guinea LNG project, where approximately 60,000 landowners have been affected.

Together with its partners, Exxon has liquefaction capacity of approximately 65 million tons of LNG in 2010, and this is expected to increase to over 100 million tons annually over the next few years.

Unconventional gas

Exxon has developed an extensive global portfolio of unconventional gas: tight gas, shale gas, and coal bed methane.

Exxon has major interests in extracting natural gas from densely-packed shale rock formations in regions such as the US and China. This type of gas is widely known as shale gas, and has developed a controversial reputation for its extraction methods of fracturing rock formations by pumping water and chemicals into them under very high-pressure, a process referred to as fracking. The resulting contaminated water is generally kept in above-ground ponds to await removal, or else injected back into the earth. Despite Exxon having a water recycling program in place at some of its locations to reduce the amount of fresh water used, there remain major concerns about fresh water contamination in and around the locations where Exxon operates, particularly in the north eastern US states, such as Pennsylvania.

Nonetheless, Exxon has an impressive portfolio of shale gas assets in the booming US shale industry in the lucrative Woodford, Haynesville, and Marcellus plays, while also holding the most acreage in the industry at Horn River in Canada. In addition, the company has 2 million net acres in Europe, chiefly in Germany and Poland, and major plays in coal bed methane in Germany and Indonesia.

In 2009 Exxon acquired US gas giant XTO Energy, which significantly enhanced the company's unconventional gas reserve, as well as instantly expanding its experience and expertise in the sector.

Biofuels

According to IEA figures, 97% of future increases in oil demand are due to transport fuels, and this potential growth makes the need to find alternative fuels even more urgent. As a result, biofuels have become an increasingly important part of Exxon's operations. Exxon lists its research into advanced biofuels as one of the highlights of its environmental policy for 2009, having launched a program with leading genomics innovator Synthetic Genomics Inc. to research and develop next-generation biofuels from photosynthetic algae.

Exxon is also a founding sponsor of the GCEP at Stanford University, a pioneering research effort to identify "potentially game-changing breakthrough science" to reduce GHG emissions. At the company's manufacturing sites, the implementation of new technologies to meet product quality standards, improve efficiency, and reduce emissions is a continuous process.

One of the major environmental benefits of algae biofuel is that it does not compete with food crops, such as sugar cane or corn used for ethanol. Algae crops can be grown all year-round – using land unsuitable for food crops – in treated wastewater or saltwater. Another environmental benefit is that plenty of CO₂ is required for the commercial production of algae, meaning that an algae-based fuel can be used as means of capturing and converting carbon. Both these factors make algae biofuels a very sustainable potential replacement for traditional liquid transport fuels.

Exxon's R&D effort for algae-based fuels is a long-term project, with the company expecting to spend around \$600m over the next 10 years.

Renewables

Despite packaging its research and development into algae-based biofuels as investment into "renewable energy," Exxon does not pursue a business policy that involves investment into renewable energy technologies such as wind, solar, or hydro. The company's primary focus remains on the exploration, production, and marketing and selling of crude oil and natural gas and its products, and its key focus is on improving the efficiency of its core operations rather than diversifying into clean energy technology.

However, Exxon does provide oils and lubricants to the wind turbine manufacturing industry, and in 2008 the company began using solar panels to power a network of offshore platforms near Malaysia. ExxonMobil Exploration and Production Malaysia Inc. (EMEPMI) are combining solar panels and thermoelectric generators to power unstaffed oil and gas platforms operated by remote control.

Biodiversity

As part of Exxon's approach to environmental protection it strives to gain a thorough understanding of its surroundings and operating environment via the use of sound data on environmental aspects and biodiversity. The company works alongside the UN World Conservation Monitoring Centre on the Proteus Partnership, a project that aims to provide ready access to comprehensive, high-quality information and data on worldwide environmental conservation.

In addition, Exxon conducts environmental, socioeconomic, and health impact assessments (ESHAs), and then integrate these results into the evaluation and decision-making process of each project. Part of this is the incorporation of biodiversity protection measures, whereby Exxon identify biodiversity protection objectives and actions for each location through its "environmental business planning" efforts. Such mitigation practices include taking part in initiatives to enhance wildlife habitats, and modifying engineering design, construction, and operating practices in sensitive areas.

A more specific example of Exxon's biodiversity protection efforts is its role in the industry's worldwide, multi-year research on the effects of sound produced by oil and gas exploration and production on marine life. Launched in 2004 with the backing of the International Association of Oil and Gas Producers, the program aims to lessen the impacts of sound on marine life through improving industry risk assessment and mitigation, and improve the level of scientific knowledge used as a base to develop regulation strategies.

Fresh water use

Oil and gas operations can use large quantities of water that only serve to put more strain on surrounding fresh water resources. Furthermore, the development of unconventional energy sources, such as oil sands and shale gas, require ever greater amounts of fresh water.

Exxon claim to be using a wide range of approaches to reduce freshwater use and preserve water quality, such as on-site recycling and water re-use and purchasing waste water for use in operations. In 2009, the company's net consumption of fresh water at its operations was 2.2 billion barrels, representing a 3% reduction from 2008. Since 2005, Exxon has recycled over 50% of fresh water used, which aids in effectively managing its consumption.

ExxonMobil Development Company's environmental standard for water management requires projects in water-stressed regions to conduct assessments of available resources, and identify ways to reduce freshwater consumption. Ways in which Exxon and its subsidiaries are advised by to reduce consumption include substituting lower-water-use technologies, re-using fresh water multiple times, and using alternative sources such as produced water (the naturally occurring salt water that is brought to the surface with oil and gas).

In 2009 Exxon established the freshwater issue management team to better understand water-related risks and opportunities facing the company and its operations. Successes include:

- **Oil sands development in Alberta, Canada** – Here, Exxon's main focus is on sustainable freshwater availability by reducing consumption. In Alberta about 5% of licensed water is allocated for use by the oil sands industry, and as of 2010 only one third of allocated supplies are actually being utilized. By 2015 all sectors operating in Northern Alberta, where the majority of the oil sands industry's growth is occurring, will need to increase water use efficiency by 30%. Exxon hope that its current measures to reduce consumption will help it reach this target. Water treatment, recycling, and the use of produced water as an alternative allowed Imperial, the Canada-based oil and gas company that is 70% owned by Exxon, to reduce freshwater use by about 88%, equivalent to 0.5 cubic meters of water per cubic meter of oil, compared to 4 cubic meters of water per cubic meter of oil in the 1970s.
- **Improving freshwater supply and sanitation in Indonesia** – Another part of Exxon's commitment towards recognizing its responsibility to the environment and communities surrounding its operations – as well as its attempts to control consumption – involves actually improving local freshwater supplies. In an effort to combat the issues arising from a lack of freshwater and to build better relationships with local communities, Exxon created a water and sanitation program to "broaden access to clean water for Mobil Cepu Limited's surrounding communities." Through well-drilling programs and sanitation committees, Exxon utilized the will of affected communities to plan, design, construct, and monitor and maintain water and sanitation distribution systems for the area. Prior to the initiation of the project in 2008, residents had to travel by foot or bicycle over 3km to access clean water. Now, over 3,000 households from 11 villages have access to clean water 24 hours a day. Similar projects have been established in the Philippines.

Oil spills

In 2009, Exxon vessels embarked on approximately 27,000 marine voyages, and there was only one leak of trace amounts of oil from a long-term leased vessel; in the same year, there were no spills from vessels or barges owned and operated by

Exxon. The company claims its “rigorous screening process for all marine vessels, which examines hundreds of technical, operational, and other non-commercial factors” was the reason behind this impressive result.

However, in 2009 Exxon did not meet its own overall target for continued improvement in oil spills, and as a result has increased emphasis on equipment reliability, individual accountability, training to address high risk areas and increased infrastructure inspections.

In 2009, the total volume of hydrocarbons spilled from non-marine sources was about 18 thousand barrels, most of which was recovered at the site of the spill. This represents less than 0.5% of Exxon's annual oil production, which is a relatively modest amount considering these spills occurred at different locations around the globe.

Waste

When designing its operations and facilities Exxon complies with “all applicable host-country regulatory requirements.” When there are no regulations present, Exxon claims to perform to standards that are protective of the environment. The company uses the environmental standards of its ExxonMobil Development Company's to address areas of importance for each business segment, and in 2010 the company expanded the application of these standards to be developed into other existing management systems such as its OIMS.

Exxon strives to enforce its own internal regulatory requirements when operating in a country where such regulation is absent on a national scale, and as part of its standards Exxon aims to improve waste management. The company uses a tiered approach to reducing both hazardous and non-hazardous waste: firstly, it attempts to reduce waste at its source; secondly, it recycles or re-uses materials where possible; and thirdly, it treats or renders any remaining non-hazardous waste, disposing of it in compliance with local regulations where present.

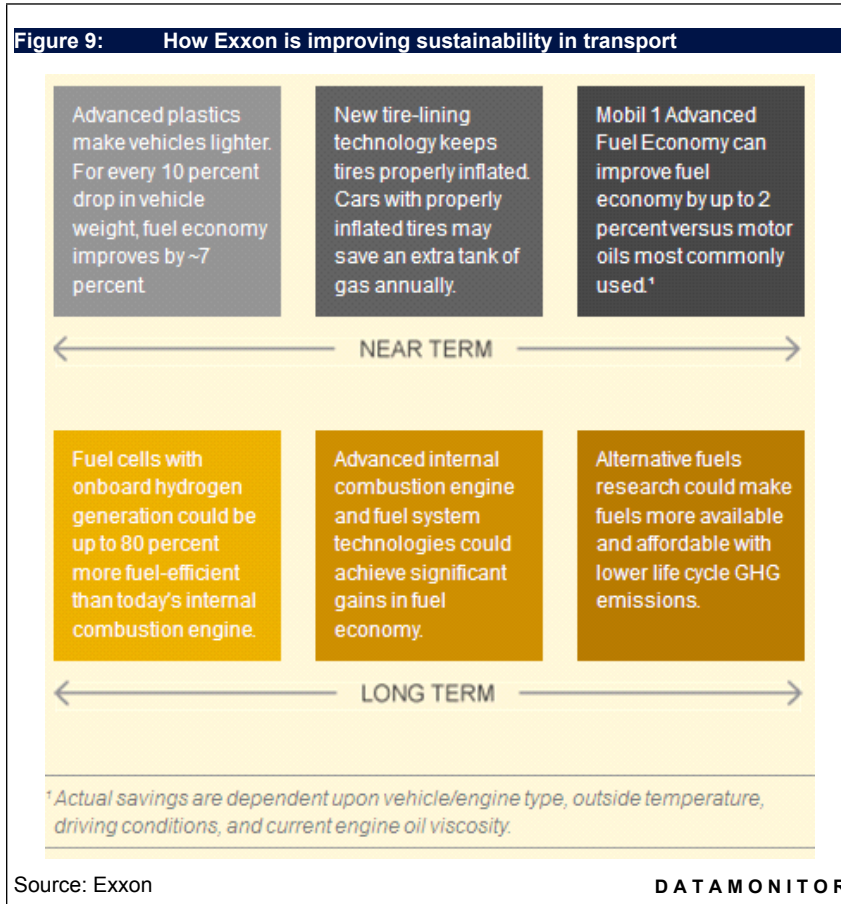
Since 2005, Exxon has successfully reused or recycled on average approximately 37% of the hazardous waste generated from its operations. The amount of hazardous waste disposed in 2009 from ongoing operations totaled 816,000 metric tons, an increase of around 430,000 metric tons from 2008. The majority of this volume – about 696,000 metric tons – was produced water, which is typically not considered hazardous, but which was been classified as hazardous waste by one local authority.

What Exxon lists as “hazardous waste” does not include quantities generated during site remediation activities. In general, the volumes of remediation waste vary from year-to-year due to the nature and timing of remediation and reclamation projects. In 2009, Exxon experienced an increase in remediation waste associated with closure activities for a third-party fertilizer manufacturing site. Through these projects, the company is working to enhance property and community value while creating opportunities for beneficial reuse of inactive properties.

Sustainability in transport

The global personal car fleet is expected to double from 800 million in 2010 to 1.6 billion in 2030. Therefore, the energy companies will have a key role in developing greener fuels if emissions from transport are even to be kept under control, much less reduced. According to IEA data, approximately 90% of petroleum-related GHG emissions are generated when customers use industry products, with the remaining 10% coming from industry operations. With this in mind, Exxon claim

to be working towards both near and long-term solutions to the issue of transport sustainability. Exxon is investing in the advancement of vehicle, fuel, and lubricant technologies that offer “significant potential” for reductions in GHG emissions.



Exxon has long been an industry leader for reliable and innovative fuels and lubricants. ExxonMobil Lubricants & Specialties produces some of the world’s best-known global brands in this field, helping vehicles and machinery achieve more efficient performance. Some of its most popular brands include Mobil 1 (vehicle lubricants), Mobil Delvac (commercial vehicle lubricants), Mobil Industrial Lubricants (plant and machinery lubricant), and ExxonMobil Aviation Lubricant (lubricant technology for commercial and general aviation).

Table 6: Environmental data					
	2006	2007	2008	2009	Interpretation*
Marine vessel spills (owned/operated and long-term leased), number of hydrocarbon spills > 1 barrel	0	0	0	0	●
Other spills (not from marine vessels), number of oil, chemical, and drilling fluid spills > 1 barrel	295	252	211	241	●
Hydrocarbons spilled (000s of barrels)	40	8	20	18	●
Controlled hydrocarbon discharges to water (000s of metric tons)	1.9	1.7	1.8	1.4	●
SO2 emitted (millions of metric tons)	0.24	0.21	0.19	0.16	●
NOx emitted (millions of metric tons)	0.18	0.16	0.15	0.13	●
VOCs emitted (millions of metric tons)	0.31	0.29	0.26	0.22	●
VOCs emitted (metric tons per 100 metric tons of throughput or production)					
Upstream	0.071	0.073	0.071	0.069	●
Refining	0.016	0.015	0.013	0.011	●
Chemical	0.043	0.039	0.043	0.036	●
Total hazardous waste disposed from operations (000s of metric tons)	122	117	386	816	●
Environmental expenditures (\$bn)	3.2	3.8	5.2	5.1	
GHG emissions, absolute (direct equity, CO2-equivalent emissions) (millions of metric tons)	146	141	131	128	●
GHG emissions, normalized (direct equity, CO2-equivalent emissions, excluding cogeneration and Hong Kong power), metric tons per 100 metric tons of throughput or production					
Upstream	22.5	21.3	19	18.2	●
Downstream	17.6	17.4	17	16.8	●
Chemical	43.9	41.6	42.2	40.4	●
Energy intensity, normalized versus Global Energy Management System base year (2000) – refining	93.9	93.2	93.4	92.6	●
Energy intensity, normalized versus GEMS base year (2001) –chemical steam cracking	91.6	90.6	91.3	90.3	●
Cogeneration capacity in which Exxon has an interest (GW)	4.3	4.5	4.6	4.9	●
Hydrocarbon flaring (worldwide activities) (millions of metric tons)	8.2	8.1	5.7	4.5	●

Source: Exxon

DATAMONITOR

* **Interpretation:** An interpretation indication is provided where Exxon consider the performance trend to be generally desirable (●), undesirable (●), or mixed (●) by Exxon. No interpretation is provided if not applicable.

Social sustainability

Exxon's standards of business conduct

In Exxon's 2009 CCR, it says that the company's culture of compliance is embedded in its standards of business conduct. Although Exxon is not a signatory of the UN Global Compact, the company claims that its 10 principles on human rights, labor standards, environment and anti-corruption are embedded in its own standards, consisting of guidelines, 16 foundation policies and "open-door communication procedures." The 16 foundation policies cover everything from conflicts of interests and political activities, to health, environment, and safety and customer relations.

Exxon also has two other systems by which it manages the conduct of its employees: its OIMS and its system management control basic (SMCB) standards. Exxon's SMCB standards structure the monitoring of activities concerning financial control risks through its controls integrity management system. This monitors compliance with standards thus meeting the requirements of the Sarbanes-Oxley Act and the New York Stock Exchange (NYSE) listing standards. Further assessment from PricewaterhouseCoopers LLP concluded that these measures are indeed effective.

Exxon's OIMS was introduced in 1992, and today provides a set of expectations that are central to its everyday work processes across its entire business, helping to guide and manage safety, health, security, and environmental and social risks at all Exxon-managed facilities worldwide. Every five years the effectiveness of the OIMS is assessed and updated accordingly.

Human rights

In Rex W. Tillerson's "letter to our stakeholders" at the beginning of the 2009 CCR, he claims Exxon sets itself clear expectations that "underpin our approach to corporate citizenship and the challenge of sustainability." The protection of human rights was a key part of this commitment, and Tillerson continued by stating that "we will remain committed to transparent and ethical practices to respect human rights and to being a positive force for economic development in the communities where we operate."

Exxon acknowledges its responsibility, as one of the world's largest multinational companies, to assist UN member states in working towards achieving the UN Millennium Development Goals. The aim of these eight goals is to develop socio-economic sustainability through combating serious diseases like HIV/AIDS and malaria, promoting gender equality, empowering women, and achieving universal primary education.

As part of its commitment towards developing human rights throughout its business operations, Exxon gives extensive human rights training to key affiliates, and staff and have so far conducted this training in 15 of the more than 70 countries it operates in. Security and human rights protection has now been incorporated into the OIMS and through meetings, conferences, and publications Exxon engages with external groups, such as IPIECA and USCIB, to provide information and develop guidance on critical human rights issues.

Security and human rights

In order for Exxon to maintain its commitment to sustainable development, the company must remain dedicated to protecting its employees and facilities while also respecting human rights within the communities in which it operates. The group has a company-wide framework on security and human rights that define this commitment and ensure its own human rights regulations are adhered to. This framework is complemented by the voluntary principles on security and human rights, a dialogue on security and human rights between the governments of the US and the UK, companies in the extractive sectors, and NGOs, all of which have an interest in human rights and corporate social responsibility.

Exxon's framework includes guidance on working with host government security personnel, memorandums of understanding regarding host government-assigned security services, approaches for interacting with private security firms, and reporting and record-keeping templates. As of 2008 the framework will be annually assessed and updated.

Furthermore, private security contracts now include provisions to address human rights concerns by requiring all personnel to be trained on, and to act consistently with, Exxon's statement of principles on security and human rights, applicable laws, provisions of the UN UDHR, the Fundamental Principles and Rights at Work of the 1998 ILO Declaration, the UN Code of Conduct for Law Enforcement Officials, and the UN Principles on the Use of Force and Firearms by Law Enforcement Officials.

So far such language exists in 60% of Exxon security contracts with private firms, and others will be updated accordingly as they come up for renewal.

Labor practices, health, and safety

Exxon's health, safety, and product safety policies and security expectations are implemented through its periodically updated OIMS framework. Due to the varying level of regulations from country to country, Exxon's expectation is that it operates either to its own standards or the jurisdiction of the national government under which its operations fall. In 2009, Exxon recorded its best-ever combined employee and contractor workforce lost-time incident rates. Since 2005, the group has reduced workforce lost-time incident rate by an average of 11% per year, and by 23% since 2008.

Exxon actively promotes a "culture of intervention" within which each individual takes responsibility for their own safety and the safety of others.

Another integral part of workplace safety at Exxon is managing the risks that are inherent to the oil and gas industry and responding swiftly to an emergency situation. Recognizing these risks and the critical role of energy supply in an emergency situation, Exxon takes a disciplined approach to business continuity planning and emergency preparedness. To respond quickly and effectively to operational incidents, Exxon routinely test the trained teams at operating sites on a range of possible scenarios, including simulated product spills, fires, explosions, natural disasters, and security incidents.

A total of 1100 Exxon employees were trained at over 30 workshops in locations across the world in 2009, and as a result a number of facilities celebrated significant safety milestones. These included the Talco oil field in Texas, where 40 years of operations without a lost-time incident were celebrated, the longest incident free period of time in the company's US operations; and the Port Dickson refinery in Malaysia, with a capacity of 88,000bpd, which achieved five years without an employee or contractor recordable incident.

Workforce health

Maintaining levels of good employee health is crucial for Exxon. The company claims that all its employees are supported by services that help them lead healthier lives. This is achieved by incorporating workforce and community health considerations into project planning, and the company tries to play an active role in addressing the wider-reaching socio-economic issues affecting the communities in which Exxon operates.

ExxonMobil Development Company works to continuously improve levels of employee health among Exxon staff, and in places like Papua New Guinea the group is particularly effective because of the presence of tropical diseases such as malaria, dengue fever, lymphatic filariasis, and Japanese encephalitis. ExxonMobil Development Company requires all personnel working in high-risk malaria zones to take malaria prevention medication and use long-lasting insecticide-treated clothing and skin repellents.

Exxon has also established its malaria control program for both direct and contracted employees, and its own HIV/AIDS program, StopAIDS, where access to community-based care and treatment is combined with education on the deadly disease.

Discrimination, workforce participation, and employee engagement

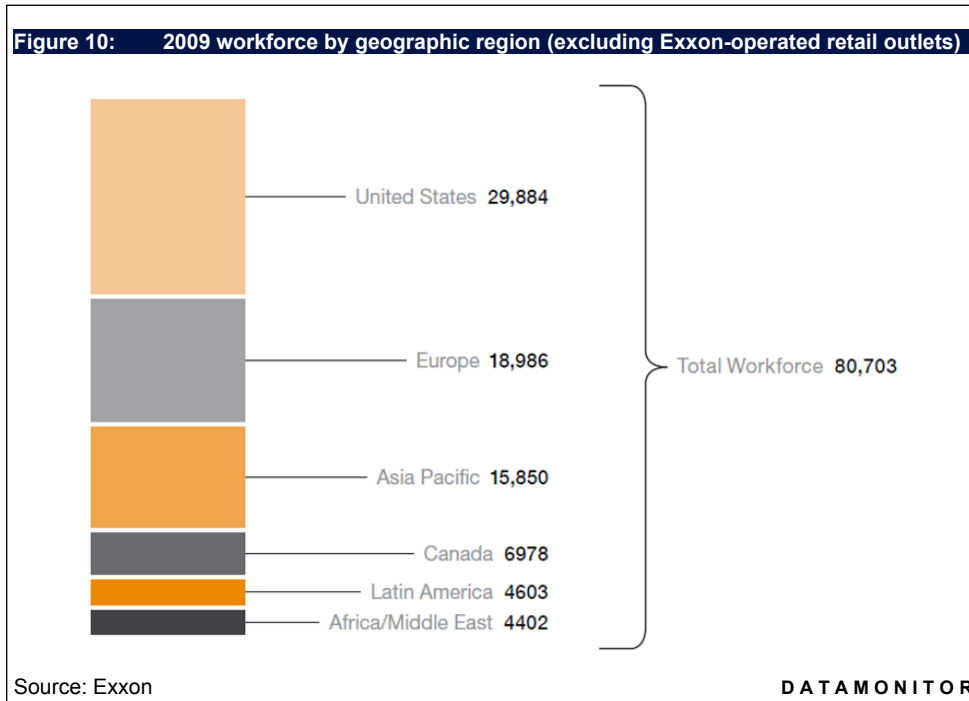
Exxon's standards of business conduct support the company's commitment to equal employment opportunity, prohibit harassment and discrimination in the workplace, and are consistent with applicable laws and regulations of the countries in which the company operates.

Exxon exercises a zero-tolerance policy when it comes to discrimination towards employees, contractors, suppliers, and customers, and deploys extensive training to ensure this policy applies throughout its global operations, including a training and stewardship program on discrimination based on sexual orientation and gender identity.

The company claims that all employees receive a "competitive package" of benefits and programs, varying due to the legal requirements and culture of each country. The funding levels of all Exxon's qualified pension plans are in compliance with standards set by applicable laws or regulations, and it is the financial strength of the corporation itself which supports the pension obligations for all employees.

For a company with over 80,000 employees, engagement obviously presents a significant challenge. Open communication is vital to achieving this, and technological developments have made the task considerable easier. However, forums still seem to provide the best opportunity for Exxon employees to engage with one another. For example, in 2009 management committee members held 32 employee forums, of which 16 were held outside the US in 14 different countries. Additionally, during the annual performance assessment and development process, all employees have a structured, documented discussion with their supervisor about work goals, training objectives, and development needs.

Achieving workforce diversity is also an ongoing challenge for Exxon. The global workforce diversity framework is intended to "attract, develop, and retain a premier workforce; actively foster a work environment where individual and cultural differences are respected and valued; and identify and develop leadership capabilities of employees to perform effectively in a variety of environments."



Process safety

Exxon has a process safety management framework that focuses on reducing risks and incidents in conjunction with its OIMS. The company looks to continuously learn from incidents in its own operations, and use this experience to enhance the design, operations integrity management, and operating practices of all its facilities.

Product responsibility

In its 2009 CCR Exxon claim to be dedicated to minimizing the adverse risks and impacts associated with the manufacture, use, and disposal of its products. During the development of its thousands of products Exxon assess safety, health, and environmental aspects as well as compliance with product safety legislation, both where the products are made and in their intended markets. Any products that are applied to certain sensitive markets, such as those that come into contact with food, undergo extra safety, health, and environmental testing.

Exxon also provides information to those who transport, use, and dispose of its products, including appropriate uses, potential health and environmental effects, personal protection and exposure controls, and disposal considerations. To help with this process Exxon provide safety data sheets for its products to cover countries with and without comprehensive product safety regulations. In 2009, more than 350,000 of these data sheets were distributed to Exxon customers in more than 80 languages.

Local content and local hiring practices

Oil and gas projects, while carrying many environmental risks, also bring opportunity for growth and development on a local, regional, and national scale. In order to ensure the company does its best to leave behind a long-lasting, positive legacy Exxon established the National Content Development – Guidelines, Strategies, and Best Practices program. This works as part of the company's "multi-tiered approach" to creating local jobs; educating and training national employees, contractors, and suppliers; transferring knowledge and skills; purchasing local goods and services; and making strategic community investments.

Approximately 65% of Exxon employees are located outside the US, so local hiring practices ensure that the company workforce remains culturally diverse. Furthermore, many of the contractor and supplier agreements include national employee hiring and training plans.

The company has made significant progress with hiring host country nationals for oil and gas projects. For example, in Indonesia nationals make up 99% of the employees working on the Aceh production operations and about 85% of ExxonMobil Oil Indonesia Inc., Mobil Cepu Limited, and other new exploration affiliate employees. For Exxon's Sakhalin-1 project in Russia, more than 500 nationals are employed directly by ENL, representing about 75% of the company's workforce. By the end of 2010 Exxon expect to hire over 170 Russian employees to support future operations. This, combined with the continuing decline in expatriate employees, will result in Russian nationals making up nearly 85% of the project's workforce by 2011.

In Nigeria, 89% of Exxon's total workforce is Nigerian, and in Qatar the figure was 25% as of 2009, but there are plans to increase this to reach the national target of 50%. In Angola, the number of national employees has risen from 31 to over 500 between 1999 and the end of 2009.

Supplier development

Exxon works alongside host governments, NGOs, and other stakeholders to develop local companies and create a competitive industrial base. Training programs are provided to suppliers, contractors, and vendors, and two types of regular supplier audits are carried out to bring them in line with the company's supplier prequalification requirements, as well as global industry standards.

For example, in Angola the company supports training and assistance programs through the Centro de Apoio Empresarial, which resulted in local suppliers signing 260 contracts valued at \$110m and representing over 2400 jobs with the oil, non-oil, and gas industries between 2005 and 2009. Esso Angola expenditures with Angolan companies totaled \$546m in 2009, or 41% of in-country spending.

Training and development

Training and developing staff is important if Exxon wishes to maximize the utilization of its employees, and is an important step to ensuring diversity and inclusion in the workplace, as well as encouraging participation at all levels of the organization.

The following are examples of Exxon's extensive training and development programs across its business segments:

- **Papua New Guinea** – Exxon affiliate Esso Highlands Limited expects to hire and train 400 nationals during its production life, and \$60m has been committed to the building of two facilities to train approximately 1,000 graduates per year over the next four years, to support the construction of a new LNG facility.
- **Corporate and technical training** – In 2009 Exxon's major business units spent a combined \$72m on training over 52,000 participants to help them progress in their careers.
- **Management** – In 2009 more than 3,500 employees at various levels of management participated in ExxonMobil's leadership development training programs, 25% of which were women and 58% of which were non-US employees.

Social investment and community impacts

In many of the countries where Exxon operate, they are faced with a number of social and environmental problems that existed before the company began its operations there, and whereas Exxon cannot address all of the issues it is faced with, it can attempt to make strategic community investments that align themselves with global and social priorities, as well as Exxon's own business goals.

By focusing a significant chunk of its spending on "signature programs" in challenging countries, particularly in Africa, Exxon can work towards addressing three of its long-term challenges: eliminating malaria; advancing economic opportunities for women; and improving education, especially in mathematics and science. These goals are also integral to the UN's Millennium Development Goals.

The ExxonMobil malaria initiative and women's economic opportunity initiative are two vehicles which Exxon uses to achieve its goals, with millions of dollars being spent trying to assist national governments, NGOs, and development agencies in trying to address the most urgent social issues in the countries where it is most needed.

Exxon is also developing internal business policies to enable the development of minority-owned and female-owned businesses. Between 2003 and 2009 the company has spent almost \$4bn on materials and services from such enterprises.

Involuntary resettlement and indigenous peoples

In some countries Exxon encounters indigenous civilizations that are directly impacted by upstream projects. In its 2009 CCR the company claim to "mediate and work to resolve indigenous community concerns in a timely manner." Exxon's policies on resettlement and indigenous treatment fall in line with the principles outlined in ILO Convention 169 regarding concerning Indigenous and Tribal Peoples in Independent Countries, the UN Declaration on the Rights of Indigenous Peoples, and the World Bank Operational Policy and Bank Procedure on Indigenous Peoples.

Engaging with the Aboriginal communities in Canada has been an integral part of Imperial Oil's oil sands operations in the Alberta region. An Aboriginal relations network was established to maintain relations between the company and communities affected, and through consultation groups and workforce development Imperial Oil has managed to maintain good relations with local people. The native internship program on offer has raised the percentage of Aboriginal people that make up the workforce of Imperial Oil's operations in Alberta from 3% to 10% since being established in 1998.

One of the last major resettlement programs conducted by Exxon was associated with the Chad Export project, lasting from 2000 to 2004, and the next will occur in Papua New Guinea for a large LNG project. Exxon claims that only with the free, prior, and informed consultation of impacted communities can a new project move forward.

Human rights in the supply chain

Suppliers of goods and services play an important role in the oil and gas industry, and the human rights performance of these suppliers can have a significant impact on a company's operations. However, they are also very difficult to control and measure.

Within Exxon's available information there is no obvious description of any further mechanisms to make itself aware of the human rights performance of its suppliers. However, as mentioned previously, Exxon conducts regular audits of its suppliers both prior to the award of the contract and again once the contract has been awarded. Once a contract has been awarded Exxon does provide supervision, mentoring, and performance feedback, but whether or not this covers human rights is not mentioned.

Table 7: Social data					
	2006	2007	2008	2009	Interpretation*
Fatalities – employees	3	0	0	4	●
Fatalities – contractors	7	8	5	4	●
Lost-time incident rate – employees (per 200,000 work hours)	0.049	0.031	0.049	0.036	●
Lost-time incident rate – contractors (per 200,000 work hours)	0.052	0.065	0.049	0.04	●
Lost-time incident rate – total workforce (per 200,000 work hours)	0.051	0.047	0.049	0.038	●
Total recordable incident rate – employees (per 200,000 work hours)	0.33	0.33	0.36	0.3	●
Total recordable incident rate – contractors (per 200,000 work hours)	0.43	0.43	0.49	0.39	●
Total recordable incident rate – total workforce (per 200,000 work hours)	0.38	0.38	0.43	0.35	●
Number of regular employees at year end (\$ 000s)	82	81	80	81	
Percentage of workforce – non-US	63	63	63	63	
Percentage women – global workforce (excluding company-operated retail stores)	24	25	25	26	●
Percentage management and professional new hires – women	41	38	39	38	●
Percentage management and professional new hires – non-US	72	71	69	63	

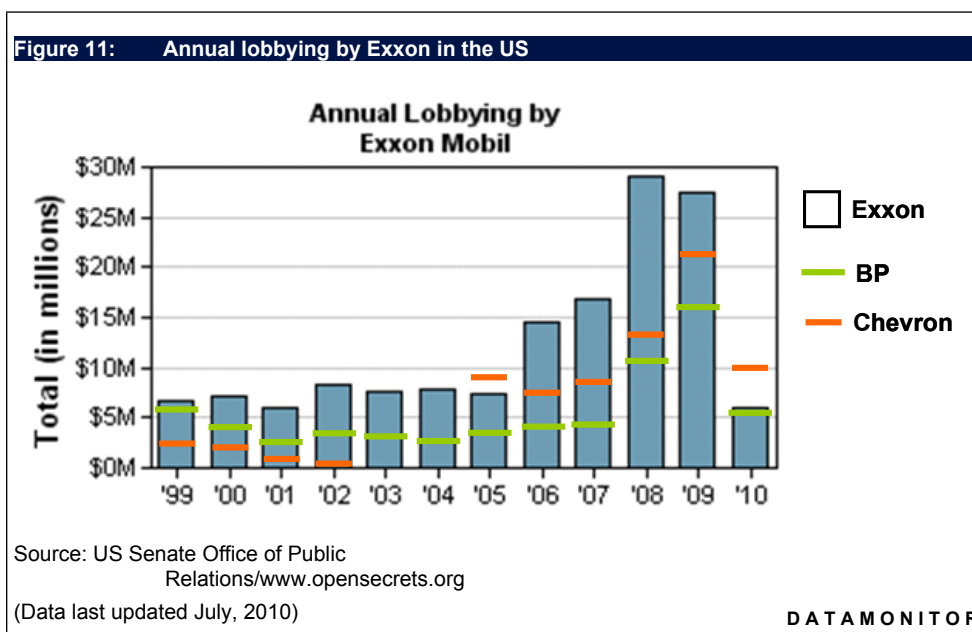
Source: Exxon **DATAMONITOR**

* **Interpretation:** An interpretation indication is provided where Exxon consider the performance trend to be generally desirable (●), undesirable (●), or mixed (●) by Exxon. No interpretation is provided if not applicable.

Economic sustainability

Public advocacy and lobbying

Most of Exxon's lobbying activity occurs in the US, where the company spent more than \$27.4m in 2009, a big increase on the \$14.5 million spent in 2006. In 1999, the first year of operations for the combined Exxon and Mobil companies, it is estimated that that company spent \$11.6m on lobbying activities in the US. This increase in spending suggests that Exxon has become more and more concerned with the politics of climate change and environmental damage, as well as other issues related to energy security and pricing. Exxon is not alone: its fellow oil and gas majors are spending more money on lobbying and public affairs programs.



Note: US Senate Office of Public Relations did not provide Chevron data for the years 2003 and 2004.

The Deepwater Horizon oil spill provided oil companies another reason to lobby Washington DC in the wake of the moratorium that was issued on offshore drilling in the Gulf of Mexico. However, on December 2, 2010 President Obama passed legislation that maintains a drilling ban in both the eastern Gulf of Mexico and along the Atlantic seaboard until 2017. Both Exxon and fellow US oil giant Chevron publicly criticized the Obama administration for reversing its decision to expand drilling off America's coastline.

Exxon spent \$2.52m in Q2 2010 to lobby the federal government on offshore drilling and other issues; down from the \$4.27m spent in the same period last year, and the \$3.39m it spent in Q1 2010.

Exxon also makes political contributions to candidate committees, political parties, associations, and other political organizations. In 2009 the group contributed a total of \$282,350 to legislative and gubernatorial candidates and caucuses in 15 US states, but the company donated over \$1.4m in total to the two political parties, with approximately 76% going to the

Republicans. Since 2000 Exxon has officially contributed almost \$7m dollars to the political parties, and approximately 90% of that total ended up in Republican coffers.

Transparency of payments to government

In 2009, Exxon's worldwide tax expenses amounted to nearly \$79bn, about four times its earnings in the same period. Exxon's worldwide effective income tax rate was 47%.

The company supports the idea that transparency should apply to all companies in all industries, but obviously has a bigger interest in advocating transparency initiatives in the oil and gas sector. Exxon claims to be working on improving transparency in the payments that both it and others in the oil and gas industry make to governments, and argues that one of the major advantages of publishing such information is that people can hold governments accountable for how contributed revenues are spent. As well as taking part in a range of national and international forums on the challenges of revenue transparency, Exxon is a supporter of – and has sat on the board of – the Extractive Industries Transparency Initiative (EITI). The EITI asks mining and oil companies to publish their payments to host governments and encourages governments to make such disclosures mandatory, as well as being open and accountable themselves as to how these funds are spent.

Debt

Exxon is not required by GRI or IPIECA guidelines to give a detailed report of the debt which it has amassed. Even though the company does publish its total debt in its annual reports, it goes little further than simply providing figures, and more detail is quite difficult to find

Should Exxon's access to debt markets become more difficult, it might not be able to maintain the level of liquidity required to fund the implementation of its strategies. Trading and treasury risks include, among others, exposure to movements in commodity prices, interest rates and foreign exchange rates, counterparty default, and various operational risks. As a company that operates in almost 80 countries Exxon is particularly susceptible to currency and exchange rate changes, which can put earnings and cash flow at risk.

Total company debt at year-end in 2009 was over \$9.6bn, up from approximately \$9.4bn in 2008. This debt increase is very manageable and in fact since 2006 company debt has only risen by 15%, impressive figures considering that during that time the oil and gas industry was badly hit by the global recession.

Preventing corruption

Exxon develops the policies that govern its anti-corruption compliance program and its commitment to compliance with the US Foreign Corrupt Practices Act (FCPA) through its anti-corruption legal compliance summary. In compliance with the FCPA and other anti-corruption laws, all Exxon employees and contractors are prohibited from making improper payments to, or engaging in improper transactions with, government officials intended to influence the performance of their official duties.

The company also maintains appropriate internal controls, and keeps accurate and complete records of all transactions, and staff that hold sensitive positions and may be required to engage with government officials in a country thought to be

high-risk in regards to corruption are also trained in formal anti-corruption law. In 2009 7,000 members of staff received this training.

Every four years, all Exxon employees worldwide are required to attend a half-day business practices review, which includes anti-corruption training.

Oil sands

Exxon's growing interest in Canada's oil sands reserves represents one of the biggest financial commitments to an upstream project in the company's recent history. Exxon's considerable capital outlays in oil sands expose the company to major financial and regulatory risks, in part due to the scale of the environmental challenges facing any oil sands project. In its 2009 report entitled, *Canadian Oil Sands Field Trip 2009: Key Takeaways*, Goldman Sachs concluded that, "oil sands projects face significant environmental challenges... [Which] present material risks to project viability and returns potential."

As well as the environmental challenges of developing Canada's oil sands Exxon is also exposed to considerable financial risk because a typical project in the Alberta region (where most of Exxon's oil sands operations exist) requires billions of dollars of capital investment and a workforce of well over a thousand employees, and projects can have a lifespan of more than 50 years.

As the most expensive source of oil in the world, oil sands projects are vulnerable to low market prices. Before the price of oil collapsed in 2008, companies with interests in Canada's oil sands planned to spend \$125bn on expanding operations to reach the goal of tripling oil production over the next 10 to 15 years. According to IEA figures, when the price of oil plummeted from nearly \$150/bbl in July 2008 to only \$36/bbl in December 2008 about 85% of deferred or cancelled non-Organization of the Petroleum Exporting Countries (OPEC) production capacity growth was in oil sand projects in Canada.

In order for oil sands projects to be considered economically viable industry analysts believe long-term oil prices must stay above \$60 a barrel. However, a high price of over \$60 is only required for initial capital costs to be spent on the early stages of a project, because it is the long-term operating costs that are truly important. In oil sands projects these typically rely on a barrel price well below \$50, and because global oil demand will continue to grow over the next two decades there will almost certainly be upward pressure on oil prices, as companies strive to source enough supply to meet demand.

Table 8: Economic data					
	2006	2007	2008	2009	Interpretation**
<i>(\$m unless stated)</i>					
Sales and other operating revenue (including sales based taxes)	365,467	390,328	459,579	301,500	
Net income attributable to ExxonMobil	39,500	40,610	45,220	19,280	
Cash flow from operations and asset sales	52,366	56,206	65,710	29,983	
Capital and exploration expenditures	19,855	20,853	26,143	27,092	
Cash dividends to ExxonMobil shareholders	7,628	7,621	8,058	8,023	
Research and development costs	733	814	847	1,050	
Total assets at year end	219,015	242,082	228,052	233,323	
Total debt at year end	8,347	9,566	9,425	9,605	
Taxes to governments*	101,000	106,000	101,600	79,000	
Market valuation at year end	438,990	504,220	397,239	322,329	
Regular employees at year end (thousands)	82.1	80.8	79.9	80.7	
Benefits to employees (wages, salaries, pensions, etc.)	12,000	13,000	13,000	13,000	
Corporate political contributions – US state campaigns and national 527s	0.41	0.27	0.45	0.49	
Number of employee participants in corporate and technical training (\$000s)	52	35	48	52	
Total corporate and technical training expenditures	60	61	69	71	
US spending with minority- and women-owned businesses	592	583	603	863	●
Community investments	170	206.6	225.2	235	●
US	109.1	124.1	144.6	143	
Rest of world	60.9	82.5	80.6	92	
Number of EITI-participating countries	6	6	8	8	●
* Income, sales-based and other taxes and duties					
Source: Exxon					

DATAMONITOR

** **Interpretation:** An interpretation indication is provided where Exxon consider the performance trend to be generally desirable (●), undesirable (●), or mixed (●) by Exxon. No interpretation is provided if not applicable.

SWOT ANALYSIS

SWOT analysis

The company operates in more than 200 countries under the names Exxon Mobil, Exxon, Esso, and Mobil. Its leading market position across key product lines gives the company a competitive edge with a strong brand image. However, among other things, growing environmental concerns may have adverse effects on Exxon's ability to do business, its public relations, and financial performance.

Table 9: SWOT analysis	
<p style="text-align: center;">Strengths</p> <p>Leading market position and strong brand image.</p> <p>Vertically integrated operations allow Exxon to remain in control of all of its assets and products, and to have the flexibility to optimize operations.</p> <p>Vast experience in the oil and gas industry.</p> <p>Diversified revenue stream.</p> <p>Extensive global presence with both its upstream and downstream businesses.</p> <p>Continued investment in its global exploration and production portfolio will ensure future activity for Exxon.</p> <p>Extensive development of natural gas reserves, bringing a number of new projects on stream.</p> <p>Strong R&D spending will allow Exxon to remain at the forefront of industry innovation as the global energy mix changes.</p> <p>Exxon's net production of liquids in 2009 was 2.4 million bpd.</p> <p>Exxon's refineries are 60% larger than the industry average with more conversion capacity and more integration with chemical and lubricants.</p>	<p style="text-align: center;">Weaknesses</p> <p>Litigation and contingencies; the company is involved in various lawsuits, claims, and legal proceedings regarding business conduct.</p> <p>Declining net liquids production and oil reserves have led to a consistent decline in production volumes which could eventually have an impact on revenue growth rates.</p> <p>Legal proceedings leading to administrative action in Nigeria.</p> <p>Overcapacity and poor profitability in its refining arm, particularly in Europe.</p> <p>Over 90% of Exxon's business lies in oil and gas, meaning the shifting energy mix could leave them vulnerable to emerging players.</p> <p>Health and safety of its staff remains an issue for Exxon.</p> <p>Poor environmental record has led to a series of damaging media reports and an increasingly negative public perception.</p> <p>Lacking the ability to monitor the level of sustainable business practices throughout its supply chain.</p>
<p style="text-align: center;">Opportunities</p> <p>Exploration and development of unconventional energy resources as a feasible alternative to conventional fuels, in particular Canadian oil sands which is thought hold 175 billion barrels of economically viable oil.</p> <p>Rising demand for liquid fuels, particularly LNG, with huge production potential in the Middle East and Asia.</p> <p>The strong economic growth in the developing countries will drive global oil and natural gas demand.</p> <p>Increase in capital investments will develop new technology, bring new upstream projects online, increase the company's base refining capacity, and grow its chemical business.</p> <p>Over 90% of global oil demand will come from the transport sector, offering massive opportunities for company's involved in alternative transport fuels such as biofuels.</p> <p>Increased demand for petrochemicals, particularly in Asia. For example, in April 2010, Exxon Mobil announced that it has plans of commencing its second petrochemical project on Jurong Island, Singapore, by 2011.</p>	<p style="text-align: center;">Threats</p> <p>Natural disasters may disrupt Exxon's business operations threatening projected production targets and revenue growth.</p> <p>Increasingly stricter norms regarding environmental regulation.</p> <p>Greater dangers associated with exploring and developing ever harder to reach oil and gas reserves, like very deep offshore drilling, for example.</p> <p>The BP oil spill and subsequent moratorium on offshore drilling is likely to impact production growth projections for 2010 and beyond.</p> <p>Exxon could face huge financial penalties and even loss of licenses if they fail to meet the more rigorous health and safety regulations in the Gulf of Mexico resulting from the BP oil spill.</p> <p>Risks associated with conducting business outside the US.</p>
<p>Source: Datamonitor</p> <p style="text-align: right;">DATAMONITOR</p>	

SCENARIOS TO 2030

2030 sustainability scenarios

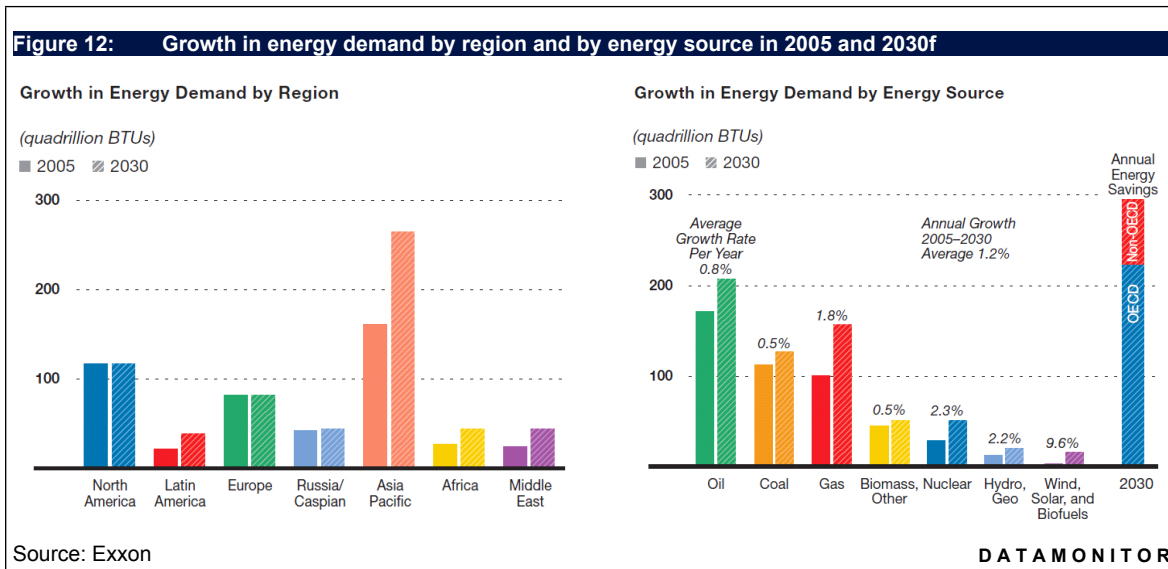
The purpose of scenario development is to assess how Exxon may react to the current challenges in the oil and gas industry, and to try and determine how the company will evolve over the next two decades. Exxon ultimately has three options with regards to its sustainability ambitions: it could decide to take the business-as-usual path and continue without any major shifts to or away from sustainable development; it could opt for a significant shift away from sustainability and seek maximum profit from its traditional hydrocarbon operations while withholding any sizable investments in mitigating its environmental and social impacts; or it could make large strides towards becoming a highly sustainable energy company, drastically reducing its environmental and social impacts and investing more income in clean energy technology.

The following section outlines how these varying commitments to sustainability may change Exxon's corporate strategy.

Business-as-usual scenario

Exxon's primary objective is to remain one of the biggest, if not the biggest oil and gas company in the world through 2030 and beyond. The challenging economic conditions, changing regulatory landscape, and prospect of ever harder to reach oil and gas reserves will not deter the company from trying to achieve this goal. Oil and gas will remain its core business for the foreseeable future, with natural gas production likely to become increasingly prominent as global demand rises and the energy mix that feeds this demand evolves.

Figure 11 is a guide to Exxon's investment and development plans through 2030, with the huge jump in demand in Asia Pacific met by a significant increase in the share of natural gas in the energy supply chain. This has already been evident in 2010, with Exxon's growing interests in Asia (particularly Indonesia and Malaysia) and ever-increasing gas production. The \$41bn merger deal with XTO Energy is testament to the important role Exxon sees natural gas playing in the world's energy future. Furthermore, Exxon's interest in the Gorgon gas project in Australia demonstrates its willingness to meet Asia Pacific's growing energy needs with natural gas.



This is all part of a wider-reaching plan for Exxon to continue ramping up production worldwide by investing in projects that deliver superior returns, as well as maximizing the profitability of its existing oil and gas production.

Exxon will not be forced into ill-judged, panic-driven investments by the possible threat of "peak oil" and will focus on disciplined investment decisions capable of keeping it at the sharp end of the market.

However, this drive to maintain a continuous flow of oil and gas production, and its refusal to diversify away from fossil fuels and explore alternative revenue streams (such as renewable energy technology), will leave it exposed to financial and regulatory risk. In 2009 Exxon participated in eight major start-up projects, and an additional 54 major projects are in various stages of planning, design, and execution from a total portfolio of more than 130 major oil and gas projects. A major challenge Exxon faces is the development of ever-more complex projects as the upstream sector looks to replace aging fields, and traditional oil and gas resources become scarcer. Varying geology, frontier conditions, and technology and labor resources pose considerable challenges to large capital projects, as well as the changing political and regulatory framework concerning climate change.

The oil sands industry poses perhaps the most significant risk to Exxon's model for increased oil production, as the controversial and highly expensive process of mining for bitumen embedded in sand and clay becomes an increasingly important part of Exxon's upstream business. As the world's conventional fossil fuel reserves become more difficult to access and develop, Canada's oil sands present a guaranteed source of crude oil, but not a guaranteed source of profit. Oil prices need to remain above at least \$50 a barrel to make these long-term capital intensive projects economically viable. While most analysts expect prices to remain above at least \$75 a barrel for the foreseeable future, the history of oil price forecasting is not a glorious one, and it is possible that prices could move below this level and stay there. Thus, more expensive energy projects, including tar sands, could become less profitable and provide a lower rate of return to shareholders. There is also a risk from environmentalists among Exxon's shareholders continuously campaigning for greater environmental and financial transparency for oil sands projects. For the foreseeable future, the Exxon board is likely

to ignore shareholder pressure to disclose the extent of the company's commitment to Canada's oil sands, unless this pressure becomes too great to resist.

Another unconventional source of fossil fuels that also presents significant risks to Exxon is deepwater drilling. The moratorium placed on offshore drilling in the Gulf of Mexico after the BP oil spill – and the disruption this caused to Exxon's production projections for the region – are a stark reminder of the risks of drilling for oil and gas in very deep waters. As a result, Exxon will invest in further improving its response plan for oil rig disasters, and will be forced to invest in stricter in-house operational regulations. However, for offshore projects in regions with less federal regulatory pressure, such as Africa, the same level of policy reform is unlikely.

Exxon will also maintain a strong and growing interest in shale gas, establishing a stronghold in North American shale and heavily monitoring the progress of Central and Northern Europe's shale gas industry, making investments when and where it deems them necessary. This may leave the company once again exposed to regulatory risks as the environmental dangers of the fracking process are well documented, and environmentalists have made headway in temporarily halting the sector's progress in the north eastern states of the US.

The company will continue its optimization program for refineries and chemical plants at the current rate, increasing the efficiency at its oldest refineries and worst-performing chemical plants, as well as continuing to shed under-performing, non-core refining assets as it has already done in Egypt, the US, and Canada.

Increasing efficiency and cutting its own operational GHG emissions will be promoted by Exxon as its primary commitment to mitigating the company's environmental impact, along with maintaining an interest in CCS and cogeneration, and driving forward natural gas growth as a cleaner burning alternative to coal-fired power generation (particularly in Europe and the US).

Exxon's interest in algae-based biofuels for transport will be the extent of the company's commitment to renewable energy through 2030, as it does not see favourable margins in clean technology such as wind and solar. It will continue to ignore shareholder pressure to diversify away from fossil fuels, and continue to meet global energy demand with the supply of oil and gas.

In areas where government regulation demands stricter controls on GHG emissions and environmental damage Exxon will not make moves beyond compliance, only doing enough to avoid incurring financial penalties. The extent to which Exxon is forced to comply with environmental regulations, and how strict these future regulations will be, depends on the outcome of environmental summits and their ability to agree and enforce a comprehensive global agreement on climate change.

Weak sustainability scenario

In the weak sustainability model, Exxon will focus on making full use of its core energy assets to meet global demand for oil and gas, and will show no interest whatsoever in developing an interest in renewable energy technology. Exxon will put almost all its efforts into boosting hydrocarbon production over the next two decades, leading to a significant increase in its operational GHG emissions, as the oldest and most inefficient of Exxon's fields come towards the end of their life and unconventional, energy-intensive oil and gas projects commence production.

Exxon will see out its current program of refining and chemical plant optimization, including the shutting down, selling, or converting of its underperforming, non-core refineries, but will then consolidate its remaining downstream assets – with no further divestment – in the hope that margins will recover. Exxon wants to remain a market leader in the marketing and selling of petroleum products, and will eventually look to reinforce its downstream business as it refuses to diversify away from fossil fuels and fossil fuel products. As other oil majors progressively divest in their downstream businesses and pursue alternative revenues streams such as renewable energy technology, moving towards 2030 Exxon will look to capitalize on the opportunity to plug the gap left by its industry peers.

The company's board of directors and key decision makers will ignore and actively seek to quash any shareholder movements to pressure the company into investing capital into alternative energy, and also any efforts to pass resolutions that require the company to be more transparent in disclosing financial and environmental data for its most capital intensive and environmentally damaging upstream projects, such as the oil sands developments in Canada. Canada's oil sands will become the focal point of the company's upstream activities for the foreseeable future, guaranteeing hydrocarbon flows but exposing the company to long-term financial risk if international oil prices turn out to be lower than the conventional wisdom suggests. Lower oil prices will require more investment to extract these high cost resources efficiently.

In the weak sustainability scenario, Exxon will embark on a land-grab of any remaining proved oil and gas reserves, and aggressively pursue an asset acquisition policy. This will expose the company to greater risk, as in recent years many countries have become far less welcoming to the international oil companies with regards to the attractiveness of their terms. America's influence on the global market will diminish between now and 2030. As it aggressively develops its domestic oil and gas resources over the next 20 years, even in the wake of the Deepwater Horizon disaster, its need for foreign fuel will decrease as Washington isolates itself from global markets.

Although Iran's fossil fuel reserves are enormous – proved oil and reserves are, according to some measures, the second biggest in the world – geopolitical sensitivities make the development of them by an American company almost impossible. Trade embargoes imposed on Iran by Washington makes it extremely difficult to envisage US businesses making deals with Tehran. If companies were prepared to defy Washington and sign oil and gas deals with Iran, they would risk a catastrophic blow to their reputation on US soil. This would have serious knock-on effects to Exxon's financial performance, thus making such a scenario highly improbable.

Even in the event of a collapse of the Iranian revolution and the installation of a pro-Western regime, it is far more likely that oil companies from Europe, Russia, and particularly China would be first in line to assist in developing the country's huge energy resources because it is they, and not the likes of Exxon and Chevron, who have a history of working with Tehran.

Exxon will look to step-up its role in developing Iraq's energy system. With oil reserves in excess of 115 billion barrels, Iraq presents an ideal opportunity for production growth, depending on its socio-economic condition. Iraq is too big to ignore, and the country needs foreign investment and expertise to develop; Exxon has both in abundance. Exxon will also enter into more financially hazardous agreements with governments and NOCs as it looks to expand its resource base. Part of this will include gambling on the presence of vast, commercially viable shale gas resources in Northern and Central Europe. As of 2010 Exxon already has shale gas interests in Germany and Hungary, and has applied for permits to explore in Poland. Exxon will hope for a boon in the European shale market on the same scale as that in the US, where shale gas deposits have been considerable enough to decrease the country's reliance on imports.

Exxon will also continue to develop its deepwater offshore portfolio both in US waters and abroad, in places such as Indonesia, Malaysia, and North Africa. The company will meet any proposed reform or moratorium on deepwater drilling with strong opposition, lobbying against any regulations that may harm the economic viability of offshore projects. Relying heavily on deepwater offshore projects for future revenue and production growth exposes the company to regulatory, environmental, and health and safety risks.

As more and more capital is spent on improving methods for finding, producing, and developing oil and gas in the light of dwindling global reserves, progress in Exxon's algae-based transport fuel business – its chief contribution to "renewable energy" – development, will suffer. Cogeneration, natural gas and CCS investments will continue under this business model but are motivated by the prospect of cutting costs and avoiding the financial impacts associated with high GHG emissions in the future.

Exxon's policies regarding social and environmental sustainability will continue as a means of damage limitation to its already poor reputation. Local hiring practices and investments in affected communities will also continue, as the company tries to avoid disruptions to future projects from unhappy communities seeking retribution for irresponsible project management. However, its efforts will not move beyond compliance with existing national and international regulation on environmental and human rights issues.

Revenue, operating profit, and market share will remain high in this scenario, especially for the first five to 10 years, when reasonably high oil prices will ensure good returns on existing projects and new fields soon to commence production. However, as we move closer to 2030 and the demand outlook is less certain, falling oil prices could leave Exxon with stranded capital in socially/environmentally risky geographies. As a long-term business model, this scenario is not sustainable.

Strong sustainability scenario

In this scenario, sustainability starts to penetrate – with varying degrees of impact – Exxon’s entire business over the next 20 years. The company will invest heavily in developing local knowledge, skills, and infrastructure, and will establish a comprehensive aid fund that can better prepare the country for co-existence with a major foreign oil firm. The company will work closely with the World Bank and the UN to ensure that revenues generated from operations in the most politically/socially unstable countries, such as Nigeria, benefit the people directly affected by them, while increasing security measures to minimize the number of oil spills through sabotage. This level of socially sustainable development will be emulated at other Exxon projects across the globe, where local employment is crucial to developing "tacit" knowledge within local communities so IOCs and state-owned companies can contribute more to the development of their native energy systems. In developing countries where a lack of resources, infrastructure, and socio-economic stability present a danger to staff and challenging economics, Exxon will take more of a consulting role. Exxon will also offer its skills and experience in CCS and cogeneration projects around the globe, where it will help increase levels of knowledge, motivated by the prospect of driving more efficient energy supply growth.

Exxon will invest more capital into addressing the most urgent issues within communities impacted by its operations, such as water supplies, infrastructure, and the building of schools to ensure future development. The company will recognize that without secure, sustainable development within host nations the possibility of reliable future production and revenue is far from guaranteed.

In an effort to further develop its role in ensuring social sustainability, Exxon will update the environmental, anti-corruption, and human rights requirements in all its contracts with suppliers, including contracts with private security companies, in order to improve the chances of sustainable development existing throughout its entire business.

Exxon will lobby hard to pressure governments and international authorities for more climate change regulation that puts all IOCs on a level playing field. The success of this approach is largely reliant upon world leaders reaching a comprehensive global agreement on global emissions levels at climate change conferences. Exxon’s increased investments to improve its environmental sustainability and reduce its emissions could potentially lead to government tax breaks, improved relations with NGOs, and the acquisition of new operating licenses.

ExxonMobil Development Company will be used as the company’s philanthropic vehicle to improve its reputation for social and environmental sustainability. Its responsibilities will be increased, and its role within the company will become very important, as the company attempts to become a member of, among others, the WBCSD, the Global100 signatory of the UN Global Compact. Exxon will also try and improve its score in the Corporate Equality Index, and become listed in the FTSE4Good and Dow Jones Sustainability indexes. This will come in conjunction with efforts to improve relations between the company and the WB and UN, with the aim of improving its reputation, because as shareholders and consumers become ever-more conscious of the issues affecting the environment and climate change, Exxon must be able to adapt at the same pace at which attitudes are changing.

This includes pursuing alternative revenue streams from areas such as renewable energy technology. For the next 10–15 years Exxon will favor the use of small-scale solar and wind installations to meet the energy needs of a select number of refining and chemical plants and offshore platforms. However, as we approach 2030 and the renewable energy market grows in response to stimulus from national governments and organizations such as the WB and the IMF, Exxon will begin

to see more favorable margins in the renewables industry and embark on a program of acquisitions and mergers that will steadily grow its interest in the market. Exxon will put in place a business model to scale-up capital expenditure on renewable energy through 2030 and beyond. The company will have to reassure environmentalists and governments that the large profits earned off the back of increased hydrocarbon production over the next two decades will be used to develop a renewable energy arm. Exxon will continue with the optimization program in its downstream business and start shedding its underperforming, non-core profits in the face of poor margins. The company will increase R&D spending on renewable power generation.

Exxon's interest in natural gas, including shale, will continue to grow as the cleaner-burning fossil fuel overtakes coal as the world's second largest contributor to energy supply. The company will also ramp-up LNG production and embark on a program to construct a growing number of LNG terminals, particularly in Europe, as Exxon seeks to take Asia's rich supplies of gas to all corners of the world.

Exxon will remain highly active in the oil sands industry as oil and gas will still represent the core of its business for many years, and the company will invest to ensure a strong reserves-to-production ratio, while taking the oldest and least-efficient of its fields offline. Exxon will strive to become the world's most energy efficient IOC, using increasing investments in technology R&D to drastically cut its operational emissions levels and reduce fresh water usage, particularly at its oil sands fields and chemical plants.

Exxon will also look to become the out-and-out market leader in algae-based transport fuels as the world looks to reduce its reliance on petroleum-based fuel for the world's growing car fleet. However, there are refining capacity issues that Exxon will need to overcome before biofuels can establish itself in the energy supply chain. The long-term projects to which Exxon is committed are dependent on an oil price of \$50–90 per barrel over the next 20 to 30 years if they are to be economically sustainable.

CONCLUSION AND RECOMMENDATIONS

Conclusions and recommendations

As a fully integrated energy company whose core business is – and will remain – focused on oil and gas, Exxon will always face any number of challenges to becoming a sustainable business. As global energy demand continues to rise over the coming years – thanks to the world's emerging economies – and as Exxon strives to meet this demand through exploring and producing fossil fuels, the company's GHG emissions will undoubtedly rise. For a number of years Exxon has been working to increase the efficiency of its plants and fields as a means to cut costs. The reduction in operational emissions is a by-product of this, and in the company's available literature it does not try to hide the fact that it is the strong business case behind increasing efficiency that provides the biggest motivation.

Exxon shows no signs of surrendering its mantle of being the largest non-national oil company in the world (by market capitalization) any time in the near future, but the company cannot afford to be left behind as global sentiment shifts further and further towards a low-carbon future that doesn't rely on crude oil and, to a lesser extent, gas. Shareholder pressure to begin reducing the company's reliance on hydrocarbons for revenue growth, and to embrace alternative energy sources such as wind and solar, will not go away, and eventually Exxon will have to acknowledge these concerns. The same goes for growing shareholder worries over the extent of Exxon's financial commitment to increasingly high risk, capital intensive projects such as oil sands. Paying the penalty for contravening federal environmental legislation is an ever more significant danger for energy companies, and in order to avoid environmentally controversial projects impacting upon the company's financial performance Exxon must recognize the responsibility it has, not just to its shareholders, but also to the environment.

Exxon has performed well in the post-recession era, posting a 55% increase in third-quarter profits for 2010, signaling that the worst of the impact on oil demand is over. Large capital investments such as the \$41bn merger with XTO Energy and the company's significant growth in LNG production reflect Exxon's ambition. However, it is worth mentioning that times were so bad in the third and fourth quarters of 2009 that Exxon could not fail to post significantly improved profits off the back of rebounding oil demand in 2010, and almost all its competitors announced similarly improved profits for the same period.

Exxon must ensure that its future economic growth is not achieved at the expense of social and environmental sustainability. Despite the scale and cost of the BP Deepwater Horizon catastrophe in the Gulf of Mexico, the Exxon Valdez spill is still considered the blue print for how not to deal with an oil spill disaster, and the company has done little since then to improve its reputation for being one of the world's least responsible IOCs. Consumers have a history of boycotting products sold by a company they feel does not reflect their own attitude towards the environment, and as they become even more environmentally conscious, Exxon runs the risk of alienating existing and potential customers if it does not adapt its business philosophy. People need to see that Exxon is not taking measures to cut energy use and produce cleaner oils and lubricants simply to gain market share, but because it actually has a long-term plan to mitigate the company's environmental impacts.

The same goes for the company's approach to social sustainability. Consumers are more interested than ever before as to where their products come from, and are likely to become even more sensitive in the future. Therefore, Exxon will benefit from making sure they act responsibly within communities that are affected by operations, in particular in countries where

governments do not possess the resources, or indeed the will to offer the necessary protective measures. Becoming a signatory of the UN Global Compact and making an effort to become an invited member of the WBCSD would be a good place to start.

The company must base its future business model on financial, environmental, and social accounting. Exxon will need to be able to quantify beyond the economic implications of its operations if it is serious about being perceived as a responsible energy company. Fully utilizing the ExxonMobil Development Company as a vehicle for its philanthropic ambitions is one way in which the company can achieve its sustainable development goals.

In richer nations, lower fuel prices remain at the top of consumers' wish lists, and therein lies the challenge for Exxon and every other oil and gas supplier: there are two worlds to serve, and for operations to be considered sustainable across its entire business, the developed and developing world must be supplied and protected in equal measure. However, it is worth mentioning that, in regards to car fuel prices, the governments in developed nations such as the US and UK take a big cut at the pump through tax. In 2009, the UK government raised fuel duty to take the total tax paid at the pump to 71 pence in every pound. In the US, gasoline tax varies from state-to-state but the average combined local, state, and federal tax is almost 50 cents per gallon. Thus oil companies' control over petrol pump prices is not as tight as consumers may think.

Furthermore, in many countries in Asia, the Middle East and South Africa gasoline prices are heavily subsidized by governments, so consumers in those regions are benefitting from cheap car fuel prices. However, in the post-recession era, as governments are exercising strict austerity measures, it is possible that gasoline subsidies will be significantly cut or scrapped altogether, as has happened in India, where the government opted to scrap its subsidy of petrol prices in June 2010 in an effort to cut its budget deficit.

The board of executives at Exxon must take a long-term view when making investments in becoming more energy efficient and environmentally friendly, because the more it invests now the less likely it is to be subject to regulatory fines and even criminal charges in the future.

Nonetheless, the company will continue to be one of the world's largest suppliers of oil and gas and will not stop exploring and developing those fossil fuel reserves that are left. Although global energy demand growth will start to slow after 2015, the world's developing economies will still have an insatiable need for traditional fuels. Even in places like the US and central Europe, where renewables are becoming more established, it is more likely that coal's share of primary energy demand will be attacked by natural gas rather than by a renewable energy source. With its expanding portfolio in LNG, Exxon will be well-placed to exploit this shift in the energy mix. However, unconventional fuel sources will also continue to be central to the global energy mix, and this is unlikely to change until alternative energy can satisfy our energy needs without the help of hydrocarbons.

Exxon is unlikely to make large-scale changes to its business model over the next decade for the simple reason that it does not need to. Even with current market trends, the erratic nature of oil prices, the varying state of national economies, and the possible impact of unpredictable OPEC quota restrictions, Exxon's market value, brand strength, and reserve base are enough to sustain strong economic performance for the mid-term.

However, in the long-term its current business policy is not sustainable. It must show a willingness to adapt to the changing energy market landscape, the evolving composition of the energy mix, and the future regulatory risk of producing high

levels of GHGs emissions. Exxon is more than capable of adapting to changes in the industry as it showed by embarking on perhaps the most successful refining optimization program of all the IOCs in 2009 and 2010. But eventually, key decision-makers will have to embrace the concerns of shareholders worried about Exxon's over-reliance on fossil fuels and fossil fuel products for 100% of revenues. And as the wheels of change are set in motion, transparency will be crucial to gaining the trust of both shareholders and the general public.

APPENDIX

Table 10: Exxon timeline (since becoming ExxonMobil Corporation in 1999)			
Year	Upstream	Downstream	Chemicals
1999	Exxon Corporation and Mobil Oil Corporation merged to form ExxonMobil Corporation (Exxon).		
2000	The company completes its \$2bn Sable Offshore Energy Project located off the coast of Nova Scotia, Canada.		
2002	Exxon disposes its coal and mineral business to focus on its core operations.	Creates new business venture, ExxonMobil Travel Guide, to expand the commercial product and service line of the company's Mobil Travel Guide series.	
2003	Mobil North Sea makes a gas discovery in the southern sector of the North Sea, following the successful testing of an exploration well.	The company launches its first synthetic blend motor oil for high mileage engines and consolidates its US East and US West production organizations to improve business performance.	
2004	The company strengthens its exploration and production activity in Angola and Columbia. Receives approximately \$1.73bn from the sale of its stake in the pipeline unit of Gasunie to the Dutch government.	The government of Qatar and ExxonMobil Qatar GTL enter into a heads of agreement for a GTL project worth about \$7bn.	ExxonMobil Chemical acquires sales and marketing assets of the BP's European isopropyl alcohol business.
2005	Qatar Petroleum, Exxon, and Edison enter into an agreement for developing a LNG terminal off the coast of Italy in the North Adriatic Sea.		Exxon divests its 3.7% stake in China Petroleum and Chemical Corporation (Sinopec). ExxonMobil Chemical Company enters into a product distribution agreement with R T Vanderbilt to distribute Exxon's commercial vistalon ethylene propylene diene rubber products in North America.
2006	Exxon acquires 28% undivided interest of Abu Dhabi National Oil Company's exploration and production activities in the Upper Zakum oil field in Abu Dhabi. Exxon signs an agreement with Indonesia-based PT Pertamina, to conduct exploration and production activities in Indonesia. The company starts production from the Erha deepwater development, located approximately 97km offshore from Nigeria.	The company expands its lubricants distribution network across Germany and Poland to distribute Exxon Aviation Oil Elite 20W-50 and the company's other aviation lubricants for aircraft piston engines.	Exxon signs an agreement with Thailand-based PTT Chemical Public Company for production of low-density polyethylene (LDPE) and ethylene vinyl acetate (EVA) in a 100 kilotons per annum autoclave system. ExxonMobil Chemical and Mitsubishi Chemical Corporation (MCC) agree to terminate certain joint venture agreements for Mytex Polymers Asia Pacific (Mytex AP) and Mytex Polymers Partnership (Mytex US).
2007	Exxon completes phase one of the Sakhalin-1 project offshore eastern Russia with affiliates of Rosneft, RN-Astra, Sakhalinmorneftegas-Shelf, and others. Esso Exploration Angola (Block 15) starts production from the Marimba North project, designed to develop 80 million barrels in 1,300 meters of water more than 145km off the coast of Angola. ExxonMobil Libya signs an agreement to execute an exploration and production-sharing agreement (EPSA) with Libya's National Oil Corporation to initiate exploration activity offshore from Libya in the Sirte Basin.	Sinopec, Exxon, and Saudi Aramco receive government approval for the Fujian Refining and Ethylene Joint Venture Project. The Chinese government granted the business licenses for their two joint ventures in Fujian Province, Fujian Refining & Petrochemical Company, and Sinopec SenMei Petroleum Company.	ExxonMobil Chemical completed the expansion of its steam cracker in Singapore. The expansion project, announced in 2005, increases the ethylene capacity of the Singapore Chemical Plant by 75,000 tons per year, to more than 900,000 tons per year.

<p>2008</p>	<p>ExxonMobil Exploration and Production Malaysia signs a 25 year production sharing contract with the Malaysian national oil company PETRONAS for sustainable energy supplies to Malaysia.</p> <p>Exxon invests \$100m in offshore oil exploration in the Philippines.</p> <p>Exxon announces an investment of \$1.1bn by the Gippsland Basin Joint Venture to develop more than 270 million oil-equivalent barrels from the Turrum field in the Bass Strait, offshore southeast Australia.</p>	<p>The company announced its plans to exit the retail gas business by selling 2,220 branded service stations in the US, due to rising gasoline prices and intense competition.</p> <p>Exxon inaugurated its newest cogeneration plant at its Antwerp refinery in Belgium. Besides generating 125MW, the new plant could reduce Belgium's carbon dioxide emissions by approximately 200,000 tonnes per year.</p>	<p>ExxonMobil Chemical announces the start-up of a new \$20m compounding facility in 2008, to supply high-performance polymers to the automotive, appliance, and specialty consumer products industries.</p> <p>ExxonMobil Chemical completes 130,000 tons per annum capacity expansion at its Exxsol hydrocarbon fluids plant in Jurong Island, Singapore, increasing capacity at the site to more than 500,000 tons per year.</p>
<p>2009</p>	<p>Exxon announces an investment of \$25–30bn annually over the next five years to meet expected long-term growth in world energy demand.</p> <p>The Turkish government approves an agreement between ExxonMobil Exploration and Production Turkey and the Turkish national oil company TPAO to explore two deepwater blocks in the Black Sea.</p> <p>ExxonMobil Libya commences drilling operations in deepwater exploration well in Libya.</p>	<p>Qatar Petroleum and Exxon establish the Qatargas 2 Train 52, one of the largest operating LNG production facilities in the world.</p> <p>Exxon and Papua New Guinea LNG Project finalized a gas sales agreement with Tokyo Electric Power Company (TEPCO) for the long-term sale and purchase of LNG totalling approximately 1.8 million tons per annum.</p>	<p>ExxonMobil Chemical develop two new grades of V series co-extruded battery separator films, which enhance safety for hybrid and electric vehicles, power tools, and electronic devices.</p>
<p>2010</p>	<p>In January ExxonMobil Iraq signs an agreement with the Iraq ministry of oil to redevelop and expand the West Qurna field in southern Iraq.</p> <p>In February, Qatar Petroleum and Exxon announce the commencement of operations of Al Khaleej Gas-Phase 2 (AKG-2) project, with 1,250mcf/d of shale gas capacity. The AKG-2 project involves construction of onshore gas treating, liquids recovery, and fractionation facilities, and two additional offshore wellhead platforms.</p> <p>ExxonMobil Exploration and Production Turkey announce plans to use the Deepwater Champion – a specially designed, newly built drillship – to explore the deepwater Black Sea offshore Turkey.</p>	<p>In March Sinopec announces plans of entering into a joint venture with Exxon and Saudi Aramco to build an oil refinery which could process 12 million tons of crude per year in Fujian, China.</p>	<p>In March, ExxonMobil Chemical expands its portfolio of metallocene polyethylene (mPE) resins with the introduction of Enable mPE 35-05 grade resin for high clarity films. Enable mPE 35-05 resin provides converters and end users with significant unprecedented combination of film processing and higher alpha olefin (HAO) performance benefits.</p> <p>In April, Exxon announces that it could start its second petrochemical project on Jurong Island, Singapore by early 2011.</p>
<p>Source: Datamonitor/Exxon</p>		<p>DATAMONITOR</p>	

Company overview

Company overview

Table 11: Exxon by numbers (as of December 31, 2009)	
<ul style="list-style-type: none"> • Operating in 77 countries • Approximately 80,700 employees • 2.4 million bpd net liquids production • 9.3bcf/d of natural gas production available for sale • 5.4 million bpd of refinery output • 24.8 million metric tons of chemical prime products sold • \$4bn invested in R&D since 2004 • 39 countries with exploration and production acreage • 23 countries with oil and gas production operations • Interests in 37 refineries in 21 countries 	DATAMONITOR

Table 12: Exxon business overview (as of December 31, 2009)			
Upstream	Downstream	Chemical	Technology
<p>The upstream life cycle consists of early hydrocarbon resource identification, evaluation, acquisition, development activities, production operations, and decommissioning.</p> <p>Exxon's asset base includes exploration and production acreage in 39 countries and production operations in 23 countries around the world.</p> <p>Its current portfolio of more than 130 major development projects is expected to produce over 24 billion net oil-equivalent barrels during its lifetime.</p> <p>Exxon sells natural gas in almost all major and developing markets.</p>	<p>Exxon is the largest global oil refiner. The downstream operations refine and distribute products derived from crude oil and other feedstocks.</p> <p>Its global network of manufacturing plants, transportation systems, and distribution centers provides fuels, lubricants, and other high-value products to customers.</p> <p>Exxon markets its fuel products to millions of customers worldwide through nearly 28,000 retail service stations and three global business-to-business segments: Industrial and Wholesale, Aviation, and Marine.</p>	<p>Exxon is a world leader in the petrochemical industry with interests in 48 wholly owned and joint-venture manufacturing facilities around the world.</p> <p>It is one of the largest producers of aromatics and olefins, the basic petrochemical building blocks, and polyolefin, including plastics such as polyethylene and polypropylene.</p> <p>More than 90% of its chemical capacity is employed in businesses where Exxon rank first or second in worldwide market position.</p>	<p>Exxon is continually developing and deploying technologies to help find and develop the world's oil and gas resources located in challenging environments such as deep water, low permeability rock, and arctic regions.</p> <p>R&D is also employed to reduce environmental impact and GHG emissions, including CCS, algae-based biofuels, and cogeneration.</p> <p>Over the past five years, Exxon has invested more than \$4bn in R&D.</p>
Source: Exxon			DATAMONITOR

Table 13: Production data				
	2006	2007	2008	2009
<i>Millions of bpd unless stated</i>				
Net liquids production	2.7	2.6	2.4	2.4
Natural gas production (billions of cubic feet per day)	9.3	9.4	9.1	9.3
Oil equivalent production* (millions of oil equivalent bpd)	4.2	4.2	3.9	3.9
Refinery throughput	5.6	5.6	5.4	5.4
Petroleum product sales	7.2	7.1	6.8	6.4
Chemical prime product sales (millions of metric tons)	27.4	27.5	25	24.8
* Gas converted to oil equivalent at 6 bcf = 1 million barrels				
Source: Exxon				DATAMONITOR

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