Comparative analyses of PSO and BP regarding sustainable business

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ABSTRACT

Based on the rising social and political pressure regarding sustainable development of corporations, sustainable business is getting a more and more significant issue for the business management. To control the sustainable development of a corporation it is essential to assess the performance for benchmarking purposes or to monitor the developments over time .The paper is based on comparative analyses of British petroleum (BP) and Pakistan State Oil (PSO). In this paper the sustainable strategies are observed of these two companies and provide a model how PSO cam adopt BP sustainable business strategies and also applied to assess the sustainability performance of the petroleum majors in Pakistan. The purpose of this paper is to develop a business model for an organization which can effectively promote and support sustainable business practices in the Petroleum industry, particularly to the extent that these practices contribute to sustainable regional development overall. The purpose of this paper is to make a business model that will serve to build Sustainable business capacity to promote and support sustainable business practice in Pakistan .The results indicate that PSO is not segmenting their target markets based on the consumers' environmental attitude. Findings also indicate that green market strategies differ for each company and must be derived from a company's individual circumstances including its objectives, resources and competitive advantages. Furthermore, the findings show that most companies can implement green changes in their marketing mix but that these should only be actively promoted when a product's green attributes constitutes a key selling point. Finally, the findings indicate that financial benefits, and the possibility of gaining a competitive advantage, are the foremost incentives for implementing green measures.

Key words: sustainable business, benchmarking, competitive advantage

INTRODUCTION

Sustainable business, or green business, is enterprise that has no negative impact on the global or local environment, community, society, or economy—a business that strives to meet the triple bottom line. Often, sustainable businesses have progressive environmental and human rights policies. In general, business is described as green if it matches the following four criteria describe by Cooney, S. (2009) "Build A Green Small Business. Profitable ways to become an ecopreneur."

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1. It incorporates principles of sustainability into each of its business decisions.

2. It supplies environmentally friendly products or services that replace demand for non green products and/or services.

3. It is greener than traditional competition.

4. It has made an enduring commitment to environmental principles in its business operations.

A sustainable business is any organization that participates in environmentally-friendly or green activities to ensure that all processes, products, and manufacturing activities adequately address current environmental concerns while maintaining a profit. In other words, it is a business that "meets the needs of the present world without compromising the ability of the future generations to meet their own needs." (United Nations General Assembly (1987) *Report of the World Commission on Environment and Development*) It is the process of assessing how to design products that will take advantage of the current environmental situation and how well a company's products perform with renewable resources. (Rennie, E., 2008). "Growing Green, Boosting the bottom line with sustainable business practices." *APICS Magazine.* Vol. 18, no. 2.)

HISTORY OF BP

Before January 1999 the company was registered as the British Petroleum Company PLC. In January 1999 following a merger the company took on the Amoco name [1].They retained the name BP Amoco, until April 2000 [2] .The transition to the BP PLC name was managed by BPs advertising agency: Ogilvy & Mather and PR Consultants: Ogilvy PR. The change of name culminated in BPs new logo and re-branding, in the first quarter of 2001[3].

BP was founded by William Knox D'Arcy, an Englishman who, shortly after the turn of the century, ventured to Persia (Iran) in search of oil. D'arcy's company was first registered in 1909 under the name Anglo-Persian Oil [4] and for the next 60 years the company's focus lay in the Middle East [5].

The British government acquired a controlling stake in the company shortly before the First World War as Anglo-Persian promised secure supplies of oil [6]. Between the wars Anglo-Persian expanded into Canada, South America, Africa, Papua and Europe and in 1935 the company was renamed the Anglo-Iranian Oil Company [7].

In 1951 Iran nationalized the company's assets, at that time the UK's largest investment overseas. To counter this, the company began exploration in other Middle Eastern countries, such as Kuwait, Libya and Iraq and in 1954 the company was renamed British Petroleum Company [8]. From the late 1960s operations shifted westwards, towards the USA, (Prudhoe Bay, Alaska) and the British North sea. Both of these fields came on stream in the mid 1970s transforming the company and allowing BP to weather the oil price shocks of 1973 and 1979 [9]. BP today has operations in over 70 countries [10].

The British government sold its last shares in the company in 1987 [11]. By that time BP's performance was languishing at the bottom of its sector and a number of investments had backfired.

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In 1992 the group posted a loss and had to embark on a drastic cost-cutting exercise. A number of key figures at the top of the company are credited with turning the company around, David Simon (Lord Simon of Highbury), Peter Sutherland and following them the current group chief executive John Brown. By 1996 the group had turned around and was performing within the top quartile of the oil and gas sector [12].

The company's recent history has been dominated by a number of mergers. BP already held a 55% stake in the US Standard Oil Company and in 1987 successfully acquired the remaining 45% and formed the company BP America [13].1987 also saw BP acquire Britoil the North Sea exploration company [14].

On August 11 1998 BP and Amoco: the American Oil Co. Established in 1910 [15], announced that they had agreed the world's largest-ever industrial merger [16].

On April 7th 1999 BP announced that it would buy from Enron the 50 per cent stake it did not already own in the solar electric company Solarex [17], the company would be called BP Solarex. BP Solar's website boasts not only that BP Solar is the world's largest solar electric company but also that it has over 44 years of collective experience [18]. BP Solarex has manufacturing bases in the USA, Spain, Australia, and India and a total production capacity of 30-40 MW of solar products per-year, representing a 20 per cent share of the global market. Also in recent years BP has combined its operations with Burmah-Castrol, well known for its Castrol branded lubricants [19] and ARCO, whose petrol is on sale across a large part of the United States [20].

BP's main activities are the exploration and production of crude oil and natural gas; refining, marketing, supply and transportation; and the manufacture and marketing of petrochemicals. The group has a growing presence in gas and power and in solar power generation. This is reflected in BP's four main business segments: Exploration and Production; Refining and Marketing; Petrochemicals; and Gas, Power and Renewable. The company operates in 100 countries with well-established businesses in Europe, North and South America, Australasia and Africa.

HISTORY OF PSO

The creation of Pakistan State Oil (PSO) can be traced back to the year 1974, when on January 1st; the government took over and merged Pakistan National Oil (PNO) and Dawood Petroleum Limited (DPL) as Premiere Oil Company Limited (POCL).

Soon after that, on 3rd June 1974, Petroleum Storage Development Corporation (PSDC) came into existence. PSDC was then renamed as State Oil Company Limited (SOCL) on August 23rd 1976. Following that, the ESSO undertakings were purchased on 15th September 1976 and control was vested in SOCL. The end of that year (30th December 1976) saw the merger of the Premier Oil Company Limited and State Oil Company Limited, giving way to Pakistan state Oil (PSO).After PSO's inception, the corporate culture underwent a comprehensive renewal program which was fully implemented in 2004. This program over the years included the revamping of the organizational architecture, rationalization of staff, employee empowerment and transparency in decision making through cross functional teams. This new corporate renewal program has divided the company's major operations into independent activities supported by legal, financial, informative and other

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services. In order to reinforce and monitor this structural change, related check and balances have been established by incorporating monitoring and control systems. Human Resource Development became one of the main priorities on the company's agenda under this corporate reform. It is due to this effective implementation of corporate reform and consistent application of the best industrial practices and business development strategies, that PSO has been able to maintain its market leadership in a highly competitive business environment.

METHODOLOGY

The data will be collected from the sustainability, annual reports, and some secondary source (internet, Journals, etc). Based on the findings the approaches are compared and their applicability is discussed. A limitation of the paper is the data availability, The conclusions of the study should serve as a recommendation for PSO, how to assess their sustainability performance or at least give an idea about potential assessment procedures in regard of sustainable development.

The purpose with this research is to examine the concept of sustainable business practices on the basis of observing sustainability reports. I have chosen to look at two different

Petroleum companies PSO and BP, to compare how they are practicing sustainable business and to see how PSO can adopt BP's strategies regarding sustainable business.

The investigation is of a qualitative approach where the examined source is the companies' sustainability reports. The reports have been analyzed and from the analysis have conclusions been drawn to try and interpret how the companies have acted towards the guidelines.

SUSTAINABLE BUSINESS OR (GREEN BUSINESS) ANALYSES OF BP

Climate change and future needs

They are improving energy efficiency in BP's own operations through close performance monitoring as well as developing more efficient fuels and lubricants. They are promoting natural gas as a key part of the energy future – gas is easily the cleanest burning fossil fuel, as well as being efficient, versatile and abundantly available. They are also including a cost of carbon in investment appraisals for all new major projects to allow informed investment in fossil fuels and encourage development of the technology needed to reduce their carbon footprint. And finally, they are investing in our low-carbon businesses. Since 2005 they have invested around $4 billion in Alternative Energy, with their activity focused on advanced biofuels, our wind business in the US, solar power, and carbon capture and storage.

What progress has BP made on safety during 2009?

Safety is fundamental to BP's success as a company and 2009 was important because of the progress they made in implementing their operating management system (OMS). The OMS contains rigorous and tested processes for reducing risks and driving continuous improvement. Having been initially introduced at eight sites in 2008, the OMS rollout extended to 70 sites by the end of 2009, including all their operated refineries and petrochemicals plants. This means implementation is 80% complete. Their injury rates have come down around 75% in the past decade. .thier sympathies are also with the

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families of those 16 colleagues who died in a helicopter accident on their way back from North Sea assignments in April 2009.they closely following the work being done by investigators and the helicopter industry to enable lessons to be learned.

Internal standards or external benchmarks on sustainability-related issues

They are responsible for their operations and they are accountable for setting and observing consistent and high standards within them. Their code of conduct, for example, provides clear expectations on behaviour and compliance. However, on wider issues where their influence extends into society more generally, they support relevant external standards. In particular, they support the UN Global Compact, which sets out a series of principles for corporate responsibility. BP emerged from 2009 in great shape and with a renewed confidence and determination to realize their potential both in the short and the long term

Carbon pricing

In particular, they support a price for carbon, on the basis that there will continue to be great uncertainty in planning and making investments in low-carbon solutions, until consumers and producers recognize and pay a carbon price. They believe this price should treat all carbon equally, whether it comes out of a smokestack or a tailpipe. They believe carbon pricing will make energy conservation more attractive and alternative energy more cost competitive. It will allow informed investment in fossil fuels while encouraging investment in the technology necessary to reduce the carbon they produce. Carbon pricing is most effective when achieved through 'cap-and-trade' systems in which emissions are capped and participants trade emissions allowances.

Transitional incentives

While carbon pricing systems develop, other transitional incentives, in the form of government support and regulation, are sometimes required to stimulate the necessary investment in energy efficiency, innovation and the deployment of emerging low-carbon fuels and power.

Climate change: Copenhagen and beyond

Public debate and governmental policy development concerning climate change intensified in the run-up to the UN summit in Copenhagen in December 2009. At the conference, although no new legally binding global treaty was agreed, BP believes important progress was made. The participants, including the US and China, noted an accord that stated that deep cuts in emissions are required to hold the increase in global temperature below 2°C and committed developed countries to provide significant additional funding for measures to help address climate change in developing countries. It also created a framework for developed countries to commit to quantified emissions targets, and for developing countries to identify mitigating actions. By the end of January 2010, 55 countries had submitted pledges to cut or limit greenhouse gas emissions, or to undertake mitigating actions. According to the United Nations Framework Convention on Climate Change, these countries account for 78% of global emissions from energy use. Consistent with this, several countries in which BP operates – including the US, the UK and China – have introduced measures to improve energy efficiency or cut emissions. The EU, for example, has a '20-20-20' target for 2020 – to cut greenhouse gas emissions by 20%, to increase energy efficiency by 20% and to increase the share of renewable in the energy mix to 20%. As well as being active in solar energy and biofuels in Europe, BP has many European operations that are covered by the EU's Emissions Trading Scheme, under which emissions from heavy industry are capped and participants trade emissions allowances.

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BP's programme of action

They are acting to address the issue of climate change by making their operations more energy efficient and by creating products that help lower customers' carbon footprints. They play their part in the debate over future priorities by speaking out in favour of more robust policies that would provide a stable framework for long-term investment in a sustainable energy mix.

Efficient operations

They maintain their decade-long efforts to manage greenhouse gas emissions from their operations. They seek to increase energy efficiency across BP by requiring their operations to incorporate energy use in their business plans and implement technologies and systems to improve it. Each year since 2002, they have estimated the reduction in their reported annual emissions due to efficiency projects. These projects include reductions in flaring and venting, as well as energy efficiency projects, such as process optimization and waste heat recovery. By the end of 2009, the running total of these reductions was 7.9 million tones.

Efficient fuels and lubricants

They work in partnership with vehicle and equipment manufacturers to improve the overall efficiency of use of their fuel and lubricant products. They strive to produce their hydrocarbons as efficiently as possible, and work in partnership with vehicle and equipment manufacturers to improve the efficiency of fuels and lubricants. they have a relationship with Ford that covers several areas. For example, Ford's ECOnetic models – including the Fiesta, Focus and Mondeo – are engineered with specially formulated, advanced Castrol lubricants, which improve fuel efficiency and therefore reduce carbon dioxide emissions.

Low-carbon energy

They are building a focused portfolio of material renewable and low-carbon energy businesses. They are focusing their low-carbon energy portfolio in four key areas, based on their potential to achieve scale and become major contributors to the performance of the BP group and to greenhouse gas mitigation. Their biofuels business is concentrating on advanced, sustainable options that offer significant life cycle greenhouse gas savings. Their wind power business has substantial growth potential, particularly in the US. They market solar photovoltaic systems to consumers and companies worldwide. They are also developing plans for pioneering power plants with carbon capture and storage.

Assessing carbon costs

They build carbon pricing into our business planning. They factor a carbon cost into their investment appraisals and the engineering design of new projects. New BP investments with material carbon emissions are required to include a cost of carbon that can realistically be expected over the life of the project, currently $40 per tonne of CO2 for projects in industrialized countries. This is used as a basis for assessing the economic value of the investment, and for optimizing the way the project is engineered. This helps to keep their investments competitive not only in today's world but in a future where carbon has a more robust price.

Advocacy and outreach

BP participates in the policy debate, calling for policy action to put a price on carbon and stimulate renewable and low-carbon energy. They support policy action to address climate change at international and national levels. For example, they signed the Copenhagen Communiqué, a

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declaration by businesses calling for "a long term ambitious, robust and equitable global deal on climate change." they take steps to make customers aware of energy issues and ways they can use energy more efficiently. their website, for example, features the BP Energy Lab, which includes facts on energy use, a quiz, a children's game and a calculator that customers can use to estimate their energy use and carbon footprint.

Research programmes

They fund and participate in a wide variety of research programmes on climate change and low-carbon options for the future. BP-supported research includes the Carbon Mitigation Initiative at Princeton University, which developed the well-known wedges approach to quantify potential emissions reductions from different technologies. They also work with the Chinese Academy of Sciences on the Clean Energy – Facing the Future programme and are a founding member of the interdisciplinary Energy Initiative at MIT. They support a number of non-governmental, public interest policy research organizations and think tanks including the World Resources Institute, the Centre for Clean Air Policy and the Forum for the Future.

Major Investments

They have invested around $4 billion in their low-carbon businesses since 2005 and are on track with their commitment they made then to invest $8 billion in alternative energy by 2015. This represents a significant level of investment to date compared with their peers. BP Alternative Energy's CEO, Katrina Landis, said: "We've reviewed more than 20 technologies, some of which may well become significant in the future. At present, however, we anticipate that our focus on four key areas represents the best way forward in terms of developing a viable, scalable, and sustainable alternative energy source." Many of their low-carbon businesses involve partnerships with specialist companies whose technical expertise complements their reach and capabilities in areas such as project management.

Wind

Their wind power business enables them to compete in a fast growing, increasingly competitive market. Wind energy is growing at around 30% each year and wind farms accounted for 36% of all new power generating capacity installed in the US in 2009. BP is focusing its wind power business onshore in the US where both the physical climate and public policy favour wind technology. Since 2005 they have built their wind power business in the US from zero to a gross generating capacity of more than 1,200 megawatts (MW), enough to provide electricity for a city the size of Washington DC. They have a further 1,000MW of capacity in an advanced stage of development.

BP US gross wind capacity includes interests in operating wind farms in Fowler Ridge, Indiana, the largest wind farm in the US Midwest (600MW); Cedar Creek I, Colorado (300MW); and two projects in Texas (more than 200MW). They have also moved into full commercial operation of phase one of the Titan facility in South Dakota, which has the potential to grow to more than 5,000MW and be the biggest wind farm worldwide.

Solar

Solar power has immense potential. According to the International Energy Agency, installed solar photovoltaic capacity increased from 8 gig watts (GW) in 2007 to 13GW in 2008. This is projected to rise to 200GW by 2030, with two-thirds of it installed in OECD countries .BP has been providing solar power for more than 35 years and shipped its 10 millionth module in 2009. The business is

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constantly evolving and today BP focus is on increasing their competitiveness and their share in residential, commercial and the emerging utility customer markets. They have been rationalizing their manufacturing activities, by shifting to low-cost joint venture and supply partners to reduce unit costs and improve competitiveness. Manufacturing and module assembly have been phased out in the US and Spain. The long-term nature of BP's solar business provides customers with the assurance that they can be supported through the life of the system, typically around 25 years.

Their solar module sales were 203MW in 2009, primarily in markets such as Germany and the US where uptake is encouraged by policy-makers. They are also participating in emerging solar markets such as China, Italy and several countries in the Middle East. BP can provide customers with complete solutions including system design, procurement, development and financing, as well as monitoring, operations and maintenance, using third-party providers where appropriate. In the US, for example, BP Solar Home Solutions® systems are available through Home Depot household supply stores. BP customers range from individual roof owners through to utility scale investors. They have an increasing number of large-scale projects for commercial customers, such as a 32MW installation at Brookhaven National Laboratory on Long Island, US, and a rooftop array at Munich airport, developed with Lufthansa Airlines

Innovation

Innovation is also necessary for solar power to become cost competitive with fossil fuels. BP's newly developed process for growing silicon, Mono2TM, has been shown to convert 18% of sunlight energy into power – a relatively high efficiency level compared with many mono crystalline cells. BP also supports a range of research and development projects, including an agreement with Solar Edge to explore a solar harvesting system that uses electronics to maximize energy generation.

Carbon capture and storage, and hydrogen power

They have been playing a leading role in carbon capture and storage (CCS), which can capture most of the CO2 emissions from a power plant or major industrial project by capturing the CO2 and storing it underground. This technology can also be used in conjunction with plants that manufacture hydrogen from fossil fuel feedstock to provide industrial scale, low-carbon electricity. CCS is recognized for its potential to de-carbonize economies at scale, featuring, for example, in all of the International Energy Agency's carbon abatement scenarios. It can be applied at power plants, upstream energy projects and industrial plants such as cement and steel factories. Scaling up CCS presents challenges including cost, engineering and regulation. BP addressing these challenges in their projects, while their wider experience of CCS includes membership of the CO2 Capture Project in which companies and government departments are examining how to lower costs and assure the safety of CCS.

BP portfolio

BP have three of the world's most advanced CCS projects in our portfolio – two of which involve plans to use CCS to create hydrogen, from which low-carbon electricity can be generated. At BP joint-venture project at the In Salah gas field in Algeria, they have been capturing, injecting and storing up to one million tonnes of CO2 per year since 2004. In Abu Dhabi, they are working with Masdar – the Abu Dhabi Future Energy Company – on plans for a 400MW natural-gas-based hydrogen power plant designed to capture up to 1.7 million tonnes of CO2 each year, injecting it into a producing oilfield to maintain pressure and improve the proportion of oil reserves that can be

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recovered. In California, BP working with Rio Tinto on plans for a 250MW power plant that is being designed to use petroleum coke supplemented with coal, as needed, to create hydrogen and CO2. The hydrogen gas – around two to four million tonnes per year – would be used to fuel a power station and the CO2 would be transported by pipeline to nearby oil reservoirs and be used for enhanced oil recovery.

Biofuels

Biofuels is a natural sector for BP. Along with their understanding of the transport fuels business, conversion technologies and delivering projects at scale, they have partnered with organizations with bioscience and agricultural expertise. As a result they are able to provide a major new source of lower-carbon fuel. BP is working to produce biofuels that are low cost, low carbon, sustainable and scalable. Biofuels vary in their impacts on the local environment and their effect on greenhouse gas levels. BP focus on feed stocks that are not needed for food and that create biofuels with net greenhouse gas emissions that are significantly lower than those of conventional fuels. The most sustainable have emissions that are only around a tenth of conventional gasoline or diesel. Producing biofuels also reduces dependence on imported oil and provides jobs and markets for farming communities. They have committed more than $1.5 billion to biofuels operations and research since 2006. BP use feed stocks with high yields and high energy content, converting them to fuels through a sugar fermentation process that can also create co-products used for purposes such as electricity generation, fertilizer and animal feed.

Cellulosic ethanol

The biofuels sector is on the verge of a major breakthrough in which fuels will be made from grasses and other fibrous or cellulosic crops that are not used for food but provide high volumes of energy from small areas of land. Through their Vercipia venture in Florida, BP planning to build one of the first commercial scale cellulosic ethanol plants in the US.

Biobutanol

As well as using high-energy biomass resources, another way for biofuels to progress is through advances in processes and the chemistry of the fuel molecules into which the raw materials are converted. Biobutanol represents a step forward from ethanol as it provides greater fuel economy and can be blended into fuel in higher concentrations, thereby providing greater greenhouse gas reductions. At BP, they are developing biobutanol with their partners DuPont, building a technology demonstration plant in Hull, UK, scheduled to begin operating in 2010.

Wheat ethanol

In Europe one of the most sustainable ways to create ethanol is from excess wheat of the grade used for animal feed. This produces a concentrated form of feed as well as biofuel. BP will be using locally-sourced feed-grade wheat at a plant in Hull, UK, which we are building with partners DuPont and British Sugar, an ABF subsidiary

Blending biofuels responsibly

As well as their biofuel production businesses BP also blend bio-components produced by other operators into fuel for markets where policies require that gasoline and diesel sold to motorists include a proportion of biofuel. BP seek biofuel suppliers who are best able to meet a range of general and feedstock-specific sustainability legal requirements. In jurisdictions where legal standards for sustainability are being established and implemented, BP will seek to require the

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inclusion of contractual sustainability clauses. BP provides training on sustainability purchase practices and actively participates in industry discussions to improve contractual arrangements for sustainable biofuel supply chain practices, including verification.

Researching future biofuels

BP invests in biofuels research because they believe there is scope for many more advanced, sustainable products. We are collaborating with Martek Biosciences Corporation on a potential step-change technology using microbes to create biodiesel through sugar fermentation, as an alternative to conventional methods that use vegetable oils. In the US, they are investing $500 million over 10 years into the Energy Biosciences Institute (EBI), the world's first research centre solely dedicated to applying biotechnology to energy. The EBI is collaboration between BP, the Lawrence Berkeley National Laboratory and the Universities of California and Illinois.

Managing impact

BP operates throughout the world in locations, terrains and climates that are tremendously diverse and frequently challenging. BP aim to minimize their environmental impact by taking a systematic and disciplined approach to operations, using sophisticated risk assessment techniques that directly inform their business plans. They are incorporating their environmental management systems into OMS, the comprehensive operating management system that helps us set priorities for operations based on assessment of the key risks, including those related to environmental and social performance. BP believes this integration will promote greater efficiency and consistency across the business. Their major operating sites are all certified under the international environmental management system standard ISO 14001, with the exception of the Texas City petrochemicals plant, which is seeking certification in 2010.

Environmental challenges

In a world where a variety of energy sources is necessary to meet future demand for affordable, reliable and secure energy, we recognize that some of Bp's projects present significant environmental challenges.

Sensitive areas

They have piloted an integrated approach to identify potential environmental and social impacts in new projects, which are intended to improve thier consistency and effectiveness in mitigating such issues. This approach also applies to projects that seek access to sensitive areas, including internationally designated protected areas. Their protected areas classification includes the International Union for the Conservation of Nature (IUCN) I-IV, Ramsar and World Heritage designations. None of their new projects entered a protected area in 2009

Technology

Technology applied throughout their operations helps minimize the environmental impact of finding and producing energy. Their advanced seismic imagery technology, for example, delivers much higher quality information about the subsurface, meaning they can drill fewer wells, onshore and offshore. To obtain unconventional gas – found in tight sandstones, fine-grained shale or coal bed seams – the use of extended horizontal drilling enables them to access more of a reservoir from a single well, improving efficiency and minimizing impact. At their Zhuhai plant in China, they have developed a new way of making purified terephthalic acid – a building block for polyester used in

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clothing and plastic bottles – which cuts the facility's carbon footprint by approximately 65% as well as lowering variable costs by an estimated 40%.

Compliance management

BP operates in more than 80 countries and faces diverse and sometimes very complex regulatory requirements. They are working to ensure they have robust management systems in place to comply with the wide range of current and emerging environmental regulations that affect us. Climate change is one area where there is an increasing amount of regulation. Governments continue to identify regulatory measures at local, national and international levels. They are making effective use of resources and networks to share practices

Ecosystem services

The concept of ecosystem services considers the 'services' provided by nature – such as the provision of food, water and fiber or support for fundamental processes such as photosynthesis or nutrient cycling. Some governments are beginning to use this concept to frame discussion about human interactions with ecosystem services when shaping policy. A number of BP businesses have used an ecosystems service approach to help assess potential impacts from projects and operations, typically as a regulatory requirement. Their Cherry Point refinery in the US used an ecosystems services approach as part of the permitting process for a facilities relocation project. This approach led BP to build a water retention pond and drainage system to compensate for the loss of the natural services previously provided by the undeveloped land. They are working with non-governmental organizations and regulators to pilot and test pragmatic approaches to enable sustainable business development

Performance

They report on air emissions, waste, water and biodiversity at a local level, where it is most relevant. They are making efforts to reduce emissions to air by improving process controls and upgrading equipment. For example, three of their refineries in the US have invested substantially in replacing or upgrading combustion units to reduce emissions of nitrogen oxides and sulphur oxides. They are seeking to improve our fresh water management, particularly at sites located in water-stressed areas, and try to minimize their consumption by decreasing volumes, increasing recycling or reducing leaks. BP aim to reduce waste-water

Working in partnership on biodiversity

Working sensitively around flora and fauna is an integral part of our effort to manage environmental impacts. BP work with others to manage biodiversity where relevant in new projects and in existing operations. For example, they use techniques to mitigate the potential impact of sound on marine mammals. Prior to seismic work in the Canadian Beaufort Sea, they carried out modeling of underwater noise. They use soft start procedures to enable mammals to move from areas where seismic activity is taking place and BP use trained marine mammal observers on board vessels to guide this activity, with the power to halt work if necessary. In their onshore gas projects in the US, they have worked with The Nature Conservancy to develop plans to mitigate impacts on wildlife. In Alaska, the BP HSE team has stepped up monitoring of maternal polar bear dens and has started using infrared imagery to detect dens under snow so they can be avoided by workers and thus reduce the risk of accidental disturbance. BP partnership with the World Conservation Monitoring

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Centre gives us access to the World Database on Protected Areas, which helps ensure environmental concerns are identified at a very early planning stage.

Greenhouse gas emissions

They track their greenhouse gas emissions at a group-wide level. Each year since 2002, they have estimated the reduction in their reported annual greenhouse gas emissions due to efficiency projects. These projects include reductions in flaring and venting, as well as energy efficiency projects, such as process optimization and waste-heat recovery. By the end of 2009, the running total of these reductions was 7.9 million tonnes (Mte). However, the sustainable reductions for 2009 have been more than offset by additional emissions from increased operational activity. As such, they are reporting 65.0Mte of greenhouse gas emissions for the year 2009, which is 3.6Mte higher than the 61.4Mte reported for 2008. Increased throughput from their US refineries, the start-up of our Tangguh liquefied natural gas project in Indonesia and increased production from their deepwater production platforms in the Gulf of Mexico account for much of this increase.

Innovation at the Kwinana refinery

At Kwinana, Australia's largest refinery, they have introduced new techniques to reduce their environmental impact, while minimizing their safety risk. Kwinana's tank turnaround team, working with cleaning contractor Veolia, has devised an effective cleaning procedure for crude oil tanks. They spray light crude into the tank to dissolve sludge, which is then processed in the refinery's crude units. With this method, they significantly reduce the need for staff to enter the tanks to clean them manually – a potentially dangerous task. Also, BP's refinery has reduced its dependency on town water to about10% of that of the mid-1990s by utilizing the Kwinana Water Recycling Plant, a joint project with Australia's Water Corporation and neighboring industries. This has freed up nearly 2 gigalitres – or 800 Olympic-size swimming pools – of potable water for public use per year.

Minimizing our impacts in a new natural gas project

BP Canada's Noel project, a natural gas development in north-east British Columbia, aims to minimize environmental impact and benefit the local economy. Using solar and hydro-generated power, BP estimate the project's greenhouse gas emissions to be 80% lower than a conventional development. They've lessened the impact on the landscape by using horizontal drilling, which requires only 20% of wells compared to developments using vertical wells. They supply water for well operations via water pits, filled with runoff when water is abundant or supplied from shallow water wells during the remainder of the year. This has reduced the need to truck in water, reduced traffic and minimized the impact on local community water resources. Working with local service providers, we enhance local economic and employment opportunities. To enable local contractors to compete, BP separate contracting opportunities into small packages. The Noel project received the Best Practice Award at the 2009 World Gas Conference for its work on reducing surface footprint and CO2 emissions in a tight gas development.

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SUSTAINABLE BUSINESS (GREEN BUSINESS) ANALYSES OF PSO

Environmental Management Systems

International Environmental Management System (EMS) standards are rapidly becoming a key ingredient in strategic business planning. Today's most successful multinationals have integrated the EMS structure within their business management system. The implementation of an EMS into business operations increases internal efficiency, opens communication with external parties, and reduces management risk. PSO is attuned to potential safety, health and environmental impacts of its operations and activities. In keeping with our policies, PSO has implemented a health, safety and environmental management system and related standards to address these potential impacts and to carry out operations and activities in a manner that is protective of human health and the environment. This environmental management system at PSO is designed to make health, safety and environmental care an integral part of all company projects and a responsibility of all employees. It allocates appropriate resources and provides the training necessary to ensure the attainment of health, safety and environmental objectives and targets of the company.

ISO 14001 Certification for Environmental Management Systems (EMS)

By 2007, five PSO facilities (Mehmmod Kot, Machike, LMT Korangi, Keamari Terminal – C and Central Lab) have third-party verification of the environmental management system according to the ISO 14001 standards. At these facilities, all the processes have been designed in such a manner that they not only remain environment friendly but their performance is measured and continual improvement targets are set for performance improvement. ISO 14001 assist our managers in analyzing the environmental and safety risk involved within the total business system through review of all the organization's activities, products and services.

Product Stewardship

Product stewardship is a product-centered approach to environmental protection. Also known as extended product responsibility (EPR), for reducing the environmental impacts of products. At PSO we recognize that as product manufacturers and marketers we must take on responsibilities to reduce the environmental footprint of our products. Without serious producer commitment, we as a country cannot make significant progress toward improved resource conservation and a sustainable economy. Environmental product stewardship at PSO fostered product and market innovation, and provided customers with more value at less environmental impact. The company is pursuing with Green XL plus diesel, a differentiated diesel product, with its special green burn additive having diesel fuel additive & combustion improver technology helps in keeping the engine clean, and the environment green. It reduces black smoke dramatically, enables quick start ups and minimizes exhaust emissions that results in less pollution & greener environment. The reduction in black smoke translates into improved power & efficiency for the consumer. Moreover, reduced foaming while filling Green XL plus Diesel results in less spillage, quicker filling. Apart from the environment friendly diesel and gasoline, PSO also became the first and only OMC to introduce ethanol blended fuels at its COCO outlets in Karachi, Lahore and Islamabad. Moreover, PSO is constantly working on improving the quality of our lubricants. This shall have a significant impact in reducing emissions of carbon dioxide, carbon monooxide, nitrogen and sulphur dioxide. PSO is also working with

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OEMs for lubricants that further support development of internal combustion engines. PSO also has fuel agreements with local refineries and international supplies for supply of lead free motor gasoline and diesel. As a policy, PSO discourages its suppliers the usage of substances that cause or are suspected to cause harm to human health or the environment.

Occupational Safety Program

We have many business priorities, but there is none greater than a safe work environment. Occupational health management system involves predicting vulnerabilities, promoting good health and protecting the human resources at work place. The company believes that any occupational injury or illness is unacceptable and are committed to continuous improvement of our health and safety performance. We also expect our employees to take individual responsibility for their own health and safety and to exhibit and encourage safe work behaviors. New employees are required to be apprised of the applicable safe work practices and regulations prior to beginning work at any PSO premises. The company has its separate medical policy which constitutes a framework for management action with the preventive and curative medicine covering the whole medical program.

During FY 06-07 the company organized medical camps aimed at health awareness, first aid, emergency response training and evacuation drills at offices, installations and terminals, issued a number of HSE alerts particularly on occupational health, conducted workshops on use of personal protective equipments (PPEs), material safety data sheets (MSDS) for handling of various material at facilities and organized HSE days at PSO facilities allover the country.

Occupational Incident Analysis

The company achieved 27.21 million safe operational man–hours without any lost work day from July 2002 to June 2007. The incident rate remained 0.669%for the (FY 06–07).

The minor incidents reported at PSO were 130 excluding the incidents at contractor's end. The major cause identified was carelessness.

Contractor Safety Program

The purpose of Contractor Safety Program is to set out standards to which all contractors who work for PSO must adhere to. PSO advises the contractors on best practices to achieve the required standards. Contractor HSE program is an extension of the corporate HSE policy which expects that the contractor will demonstrate compliance with the applicable PSO site-specific requirements and the relevant rules and regulations of Pakistan.

PSO has developed a "Contractor Safety Management Standard" (CSMS) to protect both PSO and its contractor's personnel from work related injuries and fatalities. It is also meant to ensure that all the activities are carried out in an environment friendly manner thus limiting the chances of any environmental hazards. CSMS is supported by Codes of Practice (CoP), circulars or alerts, HSE booklets and industry practices / guidelines. This is to ensure the applicability of standards operating procedures for managing contractors' HSE performance at all PSO sites. Furthermore, PSO strongly encourages its contractors to conduct regular HSE inspections and audits on their equipment as well as monitoring safe and environment-friendly work practices of its employees.

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Implementation of CSMS

The implementation of CSMS is divided in 3 phases:

Phase 1: PRE-JOB ACTIVITY

After the award of contract a meeting is held with the contractor to review the work plan, all potential hazards. This meeting also entails inspection of equipment and tools readiness.

Phase 2: INTERIM EVALUATION PERIOD

PSO conducts an interim review of the contractor's compliance with the company's HSE requirements. Besides ensuring contractor safe work, the other purpose of this step is to verify that the contractual HSE obligations and conditional acceptance items, if any identified in the pre-job activity, are implemented by the contractor. The interim evaluation consists of:

Safety Inspection Checklist and Safety Program Checklist

The safety inspection checklist consists of seventeen groups of questionnaires such as house keeping, personnel protective equipment, fire prevention and fire protection, etc. Each of these individual categories has several check items. The performance rating of each category is summarized on the interim evaluation checklist and all deficiencies are communicated to the contractor to be rectified immediately. Negligence in taking corrective action or insufficient corrective action results adversely in the final evaluation conducted by PSO HSE officials. This may result in issuance of warning, personnel termination, contract suspension, at worst, contract termination.

Phase 3: FINAL EVALUATION

The HSE performance of each facility is evaluated on quarterly basis in order to improve and establish HSE culture at facility. The key performance indicators for the performance evaluation are as follows:

Risk assessment

Personal protective equipment (PPE) Compliance

SOP compliance

Incident reporting and corrective actions

Employees training

Emergency response exercises

HSE audit Observations

Housekeeping

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The facility in-charge is responsible for the compliance of health, safety and environmental aspects at their facility as it is the part of their Key Performance Indicators (KPIs).

Safety Meetings

PSO and the contractor jointly conduct safety meetings on a regular basis. The meeting is intended to provide ongoing training and communication of HSE issues. This safety meeting is recorded and documented.

Incident Investigation and Reporting

All occupational injuries, accidents / incidents and near misses associated with the contractor's on-site work are required be reported to PSO immediately. The record is maintained in accordance with Occupational Safety and Health Administration (OSHA) requirements.

Contractor Incident Analysis

172 incidents were reported at the contractor's end. The root cause identified was carelessness on behalf of the contractor.

Emergency Preparedness

Contingency planning and emergency response are key components of PSO's HSE management system. All facilities have processes in place to identify potential HSE incident risks, develop plans to address crisis scenarios and test the plans on a regular basis. PSO always ensure that employees remain well-equipped and trained to respond differently to these different threats by:

a) Ensuring that emergency response plans (ERP) for each facility are in place, and updated, completely understood.

b) Ensuring that necessary resources for response to ERP are defined and are readily available and tested periodically.

c) Ensuring that practical exercises are conducted to evaluate the applicability of emergency response plans and resources.

Emergency Response Plan

Purpose

We endeavour to ensure that:

All personnel, environment and property at PSO facilities are given the maximum protection from unforeseen events.

All PSO employees and associated personnel are aware of their correct response in the event of an emergency.

All company personnel understand the importance of this plan and receive appropriate training.

Direction and assistance is provided to PSO personnel enabling them to effectively manage all emergencies.

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Scope

The scope of the emergency response plan is to establish and maintain the procedure for identifying the potential hazard and responding to any abnormal, accidental and emergency situation at any PSO facility. These plans define the positions and responsibilities of facility staff in the event of any emergency and outline the actions they should take in the event of any threat to the people working, environment and company installation.

Emergency Response Team (ERT)

Emergency Response Team (ERT) comprises trained facility staff. ERT works in close cooperation with the Emergency Response Coordinator to implement and improve the Emergency Response plan. Specific HSE plans are established by facility, in case of any new projects or modifications at the facility, in consultation with the HSE Department

Emergency Response Exercises

Emergency response exercises are effective tools to analyze the employee's awareness and response as well as the fire fighting system capability. In exercising the ERPs it is taken into account that minimum damage is incurred to the environment by controlling spill, fire, incident control etc. ERPs are carried out at all PSO facilities on fortnightly basis and it has also become part of HSE audit to invoke ERP drill at the facility for observing the shortcomings and to measure the response time.

Energy Conservation Measures

1. Green Stations

PSO has initiated "Green Stations" throughout the country. The purpose is to develop environmental friendly retail outlets. At green stations, the IN and OUT signs which were previously on KESC have now been replaced with reflective ones. Also the tube lights of blue bars are now being replaced with the light emitting diodes (LEDs). These initiatives resulted in 75% reduction in power consumption.

2. Solar Energy System

PSO believes in promoting projects based on renewable energy. In this regard PSO initiated a project of installing solar energy system at its retail outlet which is also declared as Green Station by PSO. The purpose of this project is to utilize natural resources to generate electrical energy without damaging the environment. The system generates 50 KWH energy every day, which caters to almost 37 % of the total lighting load of the outlet for 11 hours per day. The installation of solar system has resulted in saving 18 MWH of electrical energy in a year.

3. Windmill

Windmill is another initiative of PSO for promoting renewable energy projects. The windmill is installed at Buffer Oil Terminal (BOT) that utilizes wind and generates electrical energy. This system caters office lighting load, which is 87 % of the total office lighting load, for 8 hours. After installation of windmill, PSO saves electrical energy of 7.92 MWH in a year.

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Environment Safety Measures

i. Reduction in Product Spills

The 2007 data shows that we are continuing to make progress in reducing the number of oil spills, most of which occur on land. In FY 06-07 the total oil spill at various facilities was 94.5 liters.

ii. Gas Leakage Detection System at CNG Stations

As per Oil Gas Regulation Authority's (OGRA) requirement, approximately all PSO (company and dealer operated) CNG stations have a gas leakage detection system installed. This ensures prevention of any fire or other related hazards on the respective stations.

iii. Installation of Oil Water Separator at Retail Outlet

PSO installed state of the art oil water separator at its company operated retail outlet. The purpose of this installation is to reduce the liquid affluent discharge from the car servicing area to the public drainage system. Prior to the installation of oil water separator, it was found from the test result that the sample of discharge contained 3530 mg/l of oil and grease which has been reduced to 10 mg/l which is 99 % reduction. PSO has further plan to install automatic car servicing facility along with the oil water separator to limit the effluent discharge from the cars to the drainage system which is another step of preventing environment

Consumer Safety Measure

Brake Fluid Testing

Failure of brake fluid can cause the failure of brake system, which could be a cause of accident resulting in threat to human lives and at the same time to the environment. Having consumer safety at the core of PSO's operations, the company provides facility to its customers for brake fluid testing. This test is conducted free of cost at our retail outlets through our network of Mobile Quality Testing Units. Through the test results customers

Work place Safety Measure

Intelligent Fire Detection System

During FY 06-07 old conventional fire detection system was replaced with an intelligent fire detection system at PSO head office and our facilities which includes Lubricant Manufacturing Terminal (LMT) too.

Employee Wellbeing Measure: plants and retail outlets there are three main sources of drinking water supply at PSO facilities;

1. Ground Water

2. Local Water Supply System.

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3. Tankers

The drinking water sample is collected for testing at laboratory. Ground water is tested once a year for microbial & chemical constituents while piped & non piped system of supply is checked bi-annually for microbial constituents and once in year for chemical constituents.

Water Filter

As mentioned earlier, PSO gives due importance to its employees at every level. A step towards the employees' wellbeing is the installation of water filter plant at PSO facilities i.e. terminals, depots, aviation stations, LPG plants, blending

HSE Audit

Audit Scope

Annual HSE audits are generally divided in two segments:

1. Occupational health and safety management systems (OSHMS)

2. Process & Field Audit

Audit of OHSMS is primarily a document desk audit where safety performance of the facility is assessed in terms of its incident and accident trend analysis, near miss and incident reports, risk assessments, training and awareness initiatives taken by the facility to improve its HSE performance. Extensive interviews of employees and contractors are conducted in this segment to distinguish actual from the reported. Process or field audits are based on established HSE checklists and identification of inherent or process safety risks in the facility. Generally a severity rating is assigned to every identified risk so that its mitigation plan could be developed accordingly. Different factors which contribute to the overall safety rating of the facility are equipment aging and maintenance, inherent risks like unavailability of emergency exits, fire extinguishing apparatus, work procedures in hazardous zones and emergency response planning.

HSE Training

PSO believes that all personnel whose work could affect the environment and safety of the site must have, and maintain, the necessary knowledge and skills to execute their job functions in a manner consistent with the environment friendly and safe operation of the facility. HSE department at PSO is responsible to arrange and facilitate training sessions at PSO house and various facilities. Following table shows the training targets and achievements:

Further to the above stated training sessions, HSE department carried out several seminars and events. The seminars mostly had focus on employee well being. Whereas other events revolved around occupational safety as fire drills, etc.

Following are the noteworthy seminars and events:

1. Mutual Aid Emergency Response Plan (MAERP) at LMT

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2. Basic Life Support Session at PSO House

3. Obesity, Diabetes Prevention Seminars at PSO House

4. Evacuation drills at PSO House

5. HSE days at eight locations

6. HSE Forum (this involved all OMCs and refineries)

HSE Publications

In order to create awareness among all stakeholders on HSE issues, hands-on information booklets have developed on different business lines which also form a part of HSE training curriculum. Noteworthy booklets developed by HSE department in FY 06 – 07 are mentioned below:

Construction safety Booklet

Lubricant Safety Booklet

Fire Fighting Safety Booklet

Aviation Safety Booklet

HSE Manual (Revised Version)

Awards & Accolades

Efforts of the company in the field of Health, safety and environment and community involvement have continued to be recognized through various awards in the year FY 06 - 07.

The major prestigious HSE awards won by the company are:

1st CSR & Environment National Excellence Award 2006 by Help International (HIWT)

2nd Health & Environment National Excellence Award 2006 by Help International (HIWT)

3rd Annual Environment Excellence Award 2006 by National forum for Environment & Health

HSE excellence award 2006 by National forum for Environment & Health.

Best HSE practices Award 200-07 by ILO/EFP.

CSR Policy

"PSO shall undertake social, philanthropic or community development programmes which are aligned with our business strategies or that will benefit the broader interests of the community."

CSR Guidelines

1. Associating to a cause which is in-line with the identified sectors that include:

a. Education

b. Health Sector

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c. Community Building

i. Children Welfare

ii. Women Empowerment

iii. Sports Development

iv. Heritage Preservation

v. Relief Activities

2. Credibility and repute of the charity organization seeking assistance.

These objectives serve as useful guidelines for PSO in the evaluation of proposals received from our various

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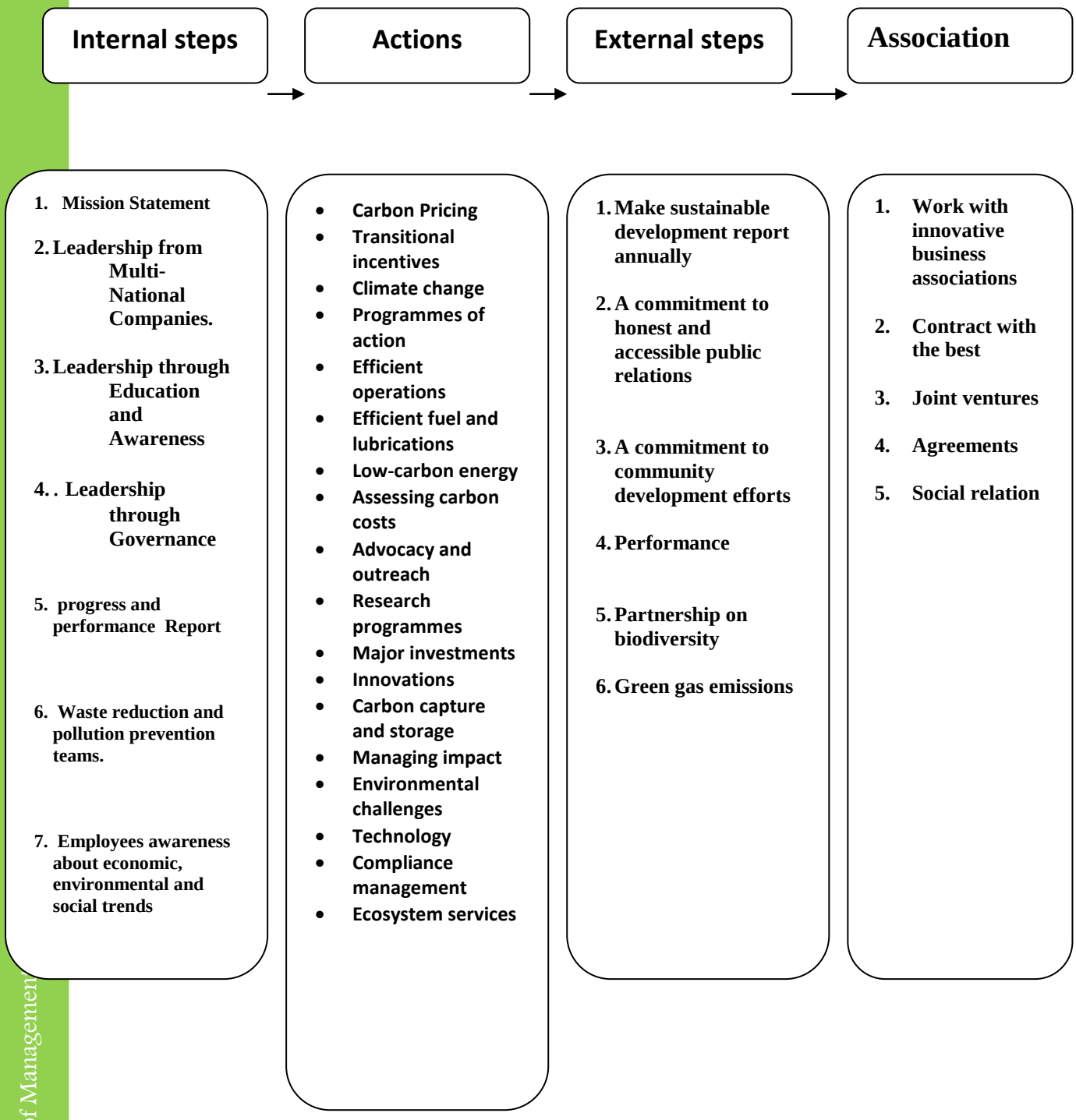
SUSTAINABLE BUSINESS MODEL FOR PSO



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Discussions on proposed Sustainable Business model

Leading your organization in a new strategic direction can be challenging. Fortunately, when it comes to sustainability, even small steps can have a huge impact. Building a sustainable business model will require a different mindset and new approaches, but the payoff can be well worth the effort. Involving employees in the mission to become more sustainable can strengthen employee and customer engagement and commitment, as well as help your organization shine as an innovative leader in your industry.

The following are some steps that PSO can adopt and will have a competitive advantage.

Internal steps should be taken

PSO should ensure that the values of sustainable business permeate throughout the company usually starts at the CEO's office. However, the best intentions are meaningless if they are lodged in the mind of one individual. Changing a company's culture and outlook requires a contribution from everyone, working as a team.

PSO sustainable business mission statement

A mission statement of PSO regarding Sustainable business is a declaration of the goals, principles and operating procedures of a company. So the sustainable business objectives should be portrait in mission statement and should be distributed to all employees and stressed repeatedly. If employees know that performance will be measured against the stated goals, and are given the resources to achieve them, the mission will be taken seriously.

Progress and performance report

For example financial reports help employees concentrate on cutting costs and maximizing the return on investment, environmental and social audits sharpen company focus. Internal and external communications can be used by a company to report on its progress in achieving social, financial and environmental goals. By developing benchmarks against which to measure progress, and reporting on successes and failures, PSO can reinforce their commitment to stated objectives, and alert employees and other stakeholders to areas where more effort is needed.

Pollution prevention and waste reduction teams

It is best to start by setting easily achievable goals, and then becoming more ambitious as confidence and expertise are gained. For example, asking all employees to bring their own coffee mugs to work, and purchasing mugs for visitors is an easy first step. Requiring all printing and copying to be done double-sided, providing refillable pens in the supply cabinet, and turning off unused lights and equipment, are other possible starting points. Next might come setting up paper and packaging recycling programs, asking suppliers to offer green alternatives, and installing energy-efficient light bulbs.

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Employees awareness regarding economic, environmental and social trends

Informed employees will be better equipped to promote company goals and to respond to major trends. Well-written books and articles, videotapes, and the occasional guest speaker or external course can put a company's efforts into perspective.

Communication

Regular staffs meetings, e-mail bulletins, accessible managers and an in-house newsletter can help maintain lines of communication. Centrally located bulletin boards or suggestion boxes can stimulate discussion and ideas. Human resources staffs who treat employees as individuals and help them juggle the competing demands of work and family promote loyalty. When employees are given the rationale for major decisions, they are less likely to listen to rumours and speculation.

Leadership from Multi-National Companies

Part of MNCs' sustainable business as they expand into Pakistan comes in leading and educating others on how to be more sustainable in a way that benefits business. PSO need to take responsibility for bringing expertise sustainable business concepts in Pakistan at the same time as creating more opportunities for people to learn from their best practices.

Leadership through Education and Awareness

Furthermore, the education of Pakistan's future business leaders, needs to be focused on making them both socially responsible and business savvy. Sustainable business concepts should be incorporated into the curricula of business degrees and courses, especially at leading business institutes such as LBS, LUMS or IBA.

Leadership through Governance

Finally, the government needs to take responsibility for holding businesses responsible for their actions through setting, and enforcing, minimum standards in all areas of business impact. Furthermore, the government should proactively support the efforts of NGOs and companies in promoting the Sustainable business agenda in Pakistan.

Actions that helps for the achievement of sustainable business objectives.

Carbon Pricing

PSO should support a price for carbon on the basis that there will be continue to be great uncertainty in planning and making investments in low-carbon solutions, until the consumer and producers recognize and pay a carbon price

Transitional incentives

While carbon pricing system in PSO develop, other transitional incentives, in the form of government support and regulations, are required to stimulate investments in energy efficiency, innovation and the deployment of emerging low carbon fuels and power

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Climate change

Climate Change is a rapidly unfolding challenge of catastrophic global, regional and national proportions. Pakistan will be affected by the impacts far more seriously than is generally recognized by the policy makers and opinion leaders. So PSO should take part to hold the increase in global temperature below 2°C.

Programmes of action

PSO should address the issue of climate change by making their operations more energy efficient and by creating products that help lower customer's carbon footprint.

Efficient operations

PSO should maintain the efforts to manage greenhouse gas emission in their operations. They should increase energy efficiency in their operations and should work on reduction in flaring and venting, as well as energy efficient projects

Efficient fuel and lubrications

PSO should partnership with vehicle and equipment manufacturer to improve the overall efficiency of use of their fuel and lubricants products.

Low-carbon energy

PSO should build a focus portfolio of material renewable and low carbon energy businesses for example they should focus of wind power and solar energy.

Assessing carbon costs

PSO should build carbon pricing in to business planning and factor a carbon in to their investment appraisal and the engineering design of new projects.

Advocacy and outreach

PSO should make a policy action to put a price on carbon and stimulate renewable and low –carbon energy. They should take steps to make customer aware of energy issues and ways can use energy more efficiently

Research programmes

PSO should participate in a wide variety of research programmes on climate change and low carbon options for the future. They should support a number of non-governmental, public interest policy research organizations and think tanks including World Resources Institute.

Major investments

PSO should invest a handsome amount in low carbon businesses and on track with their commitment they made to invest this amount in alternative energy .For these businesses they should partnership with other foreign specialist companies whose technical expertise complements their reach and capabilities in such businesses.

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The following are some areas where they must invest

Wind power businesses

Solar power businesses

Biofuels

Cellulosic ethanol

Biobutanol

Wheat ethanol

Blending biofuels responsibly

Researching future biofuels

Innovations

Innovation is a change in the thought process for doing something or "new stuff that is made useful so PSO should go for innovation on above proposed strategies. For example innovation is necessary for solar power to become cost competitive with fossil fuels .they should support a range of research and development projects including agreements with solar companies to explore a solar harvesting system that uses electronics to minimize energy generation.

Carbon capture and storage

As BP is leading role in carbon capture and storage (CCS), which can capture most of the CO2 emissions from a power plant or major industrial project by capturing the CO2 and storing it underground. PSO can also use this technology in conjunction with plants that manufacture hydrogen from fossil fuel feedstock to provide industrial scale, low-carbon electricity

Managing impact

PSO should aim to minimize their environmental impact by taking a systematic and disciplined approach to operations, using sophisticated risk assessment techniques that directly inform their business plans.

Environmental challenges

In a world where a variety of energy sources is necessary to meet future demand for affordable, reliable and secure energy, PSO should recognize that some of PSO's projects present significant environmental challenges.

Technology

PSO should realized that technology applied throughout their operations helps minimize the environmental impact of finding and producing energy

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Compliance management

PSO should ensure that they have robust management systems in place to comply with the wide range of current and emerging environmental regulations that affect us. Climate change is one area where there is an increasing amount of regulation.

Ecosystem services

The concept of ecosystem services considers the 'services' provided by nature – such as the provision of food, water and fiber or support for fundamental processes such as photosynthesis or nutrient cycling. Some governments are beginning to use this concept to frame discussion about human interactions with ecosystem services when shaping policy. So PSO should use an ecosystems service approach to help assess potential impacts from projects and operations, typically as a regulatory requirement

External steps to be taken

Make Sustainable development report annually.

PSO should prepared a annual report highlighting progress made towards improving environmental performance and enhancing workplace and societal well-being may be the best advertisement for a company. When read by corporate stakeholders, including customers, suppliers, employees, investors, regulators, members of the local community and environmental groups, such reports can go a long way toward demonstrating a company's commitment to environmental protection and social responsibility.

A commitment to honest and accessible public relations

Successfully conveying information about a company to customers, the press, the local community, plus anybody else, who has an interest in what you do, requires an up-front approach and clear, understandable language. People are naturally sceptical of what they do not understand. With knowledge comes familiarity, security, and support.

In recent years, many manufacturers of consumer products have established toll-free telephone numbers to sell merchandise and to respond to customer enquiries. Where these are staffed by knowledgeable and courteous personnel, these numbers can provide information about how products are made, and about how to use and dispose of them safely. Conversely, an operator who is unhelpful or unable to answer questions satisfactorily will serve only to frustrate and irritate customers.

A commitment to community development efforts

Although many companies still measure their contribution to the community by the size of the cheque they write to local charities, a growing number are engaged in more active forms of community work.

Performance

PSO should report on air emissions, waste, water and biodiversity at a local level, where it is most relevant. They must make an effort to reduce emissions to air by improving process controls and

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upgrading equipment. PSO should invest in their refineries substantially in replacing or upgrading combustion units to reduce emissions of nitrogen oxides and sulphur oxides. They are seeking to improve our fresh water management, particularly at sites located in water-stressed areas, and try to minimize their consumption by decreasing volumes, increasing recycling or reducing leaks.

Partnership on biodiversity

PSO should work with others to manage biodiversity where relevant in new projects and in existing operations. PSO must partnership with the World Conservation Monitoring Centre which will give them access to the World Database on Protected Areas, which helps ensure environmental concerns are identified at a very early planning stage.

Green gas emissions

PSO should track their greenhouse gas emissions at a group-wide level and should estimate the reduction in their report annual greenhouse gas emissions due to efficiency projects. These projects will include reductions in flaring and venting, as well as energy efficiency projects, such as process optimization and waste-heat recovery.

Association

Work with innovative business associations

A growing number of trade associations and business networks are issuing environmental performance guidelines, preparing educational materials on environmental and social issues, and holding seminars on subjects of interest. PSO should make agreements with such firms to obtain their sustainable business objectives.

Contract with the best

By entering into strategic alliances, small and medium-sized companies can build capacity in the market place. PSO for example, can work together with such companies to provide a comprehensive set of skills. Similarly, collaboration between companies in different countries provides the opportunity to enter global markets without incurring many of the costs.

CONCLUSION

After the analyses of both companies there are differing social context and culture of Pakistan compared to a country like the UK. Pakistan has a set of social pressures that force companies to act in a much more philanthropic and price-driven manner, thus resulting in a less compliance rate with basic sustainable business principles and objectives.

In Pakistan, the ethics of a company are judged in relation to philanthropy. This is because philanthropy and community values are highly valued in Pakistan's culture. It is expected that the more fortunate help the less fortunate, usually through donations. Companies are therefore under pressure to act in the same philanthropic way and, as a result, many do so.

In contrast to the UK, however, there is little pressure on companies to consider the economic, social and environmental impact their operation has on its stakeholders.

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One reason for this lack of pressure on sustainable business practice is the seemingly small amount of awareness within Pakistan about the challenges facing the world.

This is primarily because less people have access to the platforms that would provide them the information to engage with these issues.

But even within the seemingly few people that are aware of the issues, there is little individual action. Measures like recycling and energy conservation are rare even when the problems associated with these measures are adversely affecting people's livelihoods.

Finally, Pakistani consumers are not consciously pressurizing change through their consumer decisions which is exemplified by the price-driven nature of the economy.

This is reflected in the business culture too. Marketing, branding and reputation building are new concepts for Pakistani companies and are not always valued highly. This also means that even when companies do contribute to society, they see little benefit in publicizing this.

It is clear then that companies are already reacting to the social pressure within Pakistan by producing low-cost goods and exhibiting CSR qualities. However, if we want to expand the sustainable business mindset in Pakistan to include concerns for economic, social and environmental impact of business operations, pressure needs to be generated from the leadership of society in a variety of areas.

In this paper there are given just brief list of recommendation for PSO as opposed to comprehensive solutions. Although the current culture of corporate philanthropy is positive, but there is a needs to develop a Sustainable business concept into a culture that incorporates individual responsibility for the economic, social and environmental impact a company has on its surroundings. Such a transformation will have to happen in line with the Pakistani social context and culture and will most definitely require strong leadership from those who shape the mentality of Pakistan's society.

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