



Horizon, Issue One 2009

Editor's Letter

A CONFIDENT START TO 2009

You don't have to be a financial expert to know that the next 12 months are going to be economically challenging. Like any global company BP will have to face that challenge, but with record year end results, Tony Hayward has told staff at Sunbury, UK that the company has the "strength and confidence" to sustain its course during tough times. To do that will mean continued focus on the company's three key priorities - safety, people, performance.

In this edition, we have plenty of examples of all three. On page 12, we bring you more results context from Hayward's quarterly townhalls and interview with Performance in Perspective, along with the usual round-up of press and analyst reaction, while on page 32 the architects behind the Operating Management System talk about BP's journey to becoming "a great operating company." And on page 41, we meet Percy Rojas, a site manager for Air BP in Bolivia, whose cool head and strong safety knowledge helped bring about peaceful resolution after a group of protestors entered his aviation fuelling site.

Elsewhere in the magazine, we meet the student orchestra and their world-class conductor helping BP bring history to life (page 26) and learn how a Texas City refinery team helped bring the site back to full economic capacity and win the top Helios Award in the process (page 36). Finally, 2009 marks BP's 100th anniversary and on page 6 you can find out how you can play a part in Horizon's forthcoming centenary coverage. As always, I hope you enjoy this edition.

Lisa Davison, acting editor



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In the Papers

Dropping demand

Energy prices perked up in late January as an economic report suggested that the US economy did not shrink as much as feared, which could give more meaning to production cuts by major oil producers. The US Department of Commerce reported the economy shrank at a 3.8% pace at the end of 2008, which was not as bad as economists had expected. However, many analysts believe the American economy has been contracting even faster this year.

Associated Press

The price of a barrel of oil has fallen from a peak of almost \$150 last summer to below \$40 in recent weeks as demand for oil has fallen sharply in line with the global economic downturn. The Organization of the Petroleum Exporting Countries (OPEC) said it was prepared to act to reduce supply further if necessary; having decided to cut output in September and October, OPEC oil production will be 4.2 million barrels per day (b/d) lower and further cuts in supply would act as an inflationary pressure on the market price. The cartel accounts for roughly 35% of world oil production.

The Independent

Since July 2008, OPEC and other oil producing nations have been unable to cut supply fast enough as the global economic crisis sapped energy demand. OPEC promised last year that it would slash production by 4.2 million b/d, and leaders of the cartel say they may cut production even more.

Associated Press

The US government reports in January an enormous build-up of oil and gasoline at US storage facilities—another manifestation of how badly the deteriorating economy has cut into energy demand. With the latest report from the Department of Energy, crude inventory levels have risen by 14 million barrels since the week ending 2 January, pushing operational capacity at key storage sites to the limit. Even with the jump in crude supplies, pump prices edged up as refiners cut back production in reaction to falling demand.

Associated Press

TNT-BP appointment

Viktor Vekselberg, a billionaire investor in Russian oil company TNK-BP, said shareholders are in “no rush” to appoint a new chief executive officer after talks with a former head of Russia’s biggest mining company stalled. BP states it will provide a shortlist of candidates to run the venture, Vekselberg said from the Davos conference on energy in Switzerland.

Bloomberg

Former German Chancellor Gerhard Schröder will join the board of TNK-BP as part of a peace deal between TNK-BP’s co-owners, BP and a group of billionaires, Alfa-Access-Renova (AAR) consortium, connected to Russia. BP and TNK-BP said in statements that Schröder, James Leng, the chairman designate of Rio Tinto, and Alexander Shokhin, president of a Russian business lobby group, would be independent directors on the TNK-BP board. Previously, half the board was appointed by BP and half by AAR.

Reuters

The shareholders in TNK-BP agreed to appoint independent directors to the TNK-BP board. BP’s four nominated directors on the main board of TNK-BP are: Andy Inglis, chief executive of BP’s upstream business; David Peattie, BP’s head of Russian business; Iain Macdonald, BP’s deputy chief financial officer; and former NATO secretary-general Lord Robertson of Port Ellen.

Platts

Gas shipping

BP Trinidad and Tobago (bpTT) has stepped up shipments of liquefied natural gas (LNG) to Britain’s Isle of Grain because of higher prices on European spot markets, a company official said in January. “bpTT sells spot cargoes to a number of markets. The volume and the frequency of these spot cargo sales are driven by market



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demand and we will always seek the best value for the company and the country in the sale of any spot cargo," said the company's communications manager. bpTT, which produces 450,000 b/d, is a major shareholder in the four trains of Trinidad-based Atlantic LNG, the largest supplier of LNG to the US. bpTT and other shareholders of the four processing trains have felt the flagging US natural gas prices since late last year.

Reuters

Imports of LNG into western Europe are increasing. This is thought to be weather-related rather than due to fears of a shortage created by the gas dispute between Gazprom and Ukraine. However, analysts predict that a protracted shut-off of the Russian gas supplies to Europe that would normally use Ukraine's transit system could have a significant influence on the LNG market. Supplies to the UK's Isle of Grain LNG import terminal increased substantially in the first week of the year.

Lloyd's List

Australia's North West Shelf venture, the nation's biggest producer of LNG, said it delivered a cargo to India under an agreement with Royal Dutch Shell Plc's Shell Eastern LNG unit. BHP Billiton, BP, Chevron, Woodside's 34% shareholder Shell and another venture own stakes in the North West Shelf venture. The \$17 billion venture last year expanded LNG production capacity at its Karratha site in Western Australia by 37% to 16.3 million metric tonnes a year.

Bloomberg New

Hot times

Now that US President Barack Obama has been sworn into office, the drive to enact energy and climate change legislation may become stronger, with a key member of Congress noting his intentions to push such legislation through the House Energy and Commerce Committee before June. Henry Waxman, chairman of the House Committee on Energy and Commerce, said the committee will be acting quickly and decisively to reduce global warming and end US dependence on foreign oil.

World Refining & Fuels Today

Many damaging effects of climate change are already basically irreversible, researchers declared in January, warning that even if carbon emissions can be halted, temperatures around the globe will remain high until at least the year 3000. The findings were announced as US President Obama ordered reviews that could lead to greater fuel efficiency and cleaner air, saying the Earth's future depends on cutting air pollution.

Associated Press

The National Wildlife Federation has called on the government to set aside \$7.2 billion annually for the next two decades to help natural resources in the US adapt to global warming. Researchers calculated that it could cost at least \$5.8 billion overall to safeguard biodiversity in the humid tropics unless the world slashes its greenhouse-gas emissions quickly. The researchers suggest that countries use some of the future revenue generated from auctioning off greenhouse-gas pollution permits to fund these conservation efforts.

Washington Post

Down wind

One million people will be employed in the world wind power industry by the end of the decade, despite the financial crisis, according to a January forecast. Amid predictions that the world would need to install one new turbine every 25 minutes to reach global renewables targets, energy experts at a green summit in Abu Dhabi said the sector had maintained a near 30% annual growth rate in 2008.

The Guardian

Lord Turner is to investigate the collapse of funding for renewable energy projects in Britain after the recent exit of a string of companies, including BP and Shell. Speaking on the sidelines of the World Economic Forum, Lord Turner, chairman of the Financial Services Authority and of the government's committee on climate change, said that the study was a response to mounting scepticism over the government's plans for a huge expansion of wind and tidal power.

The Times

Dominion Virginia Power and a subsidiary of BP are planning two wind power projects in Virginia, US. Steve Walz, chief energy adviser for the state, said the projects are the clean power the administration supports. Dominion and BP Wind Energy North America announced last year they had agreed to pursue wind projects together.



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Richmond Times-Dispatch

Dominion and BP Wind Energy North America ended weeks of speculation in late January by announcing plans for a large-scale wind project in Virginia, US, and have purchased land in Tazewell County. The exact size of each project, and the scope of economic benefits, had not been determined. "This is a small but important step for Virginia's nascent wind industry," said Thomas Farrell II, Dominion's chairman.

Richmond Times-Dispatch

US policy

Oil industry sources say that recent statements by Ken Salazar, US interior secretary, on oil drilling give them hope that they can convince the Obama administration and Congress to support expanding a 2005 pilot programme to streamline leasing processes for drilling on federal lands—despite the widespread belief that a Democratic administration will be less responsive to oil interests.

Energy Washington Week

US Senate Finance Committee Democrats on Friday released a package of tax incentives and cuts that would provide billions of dollars more for energy efficiency, renewable energy and transmission projects. Both would allow wind, biomass, geothermal, and a variety of other industries to choose an investment tax for new projects brought online in 2009 and 2010. This would allow homeowners to claim a 30% tax credit on small wind energy investments and residential solar and geothermal equipment.

Platts

The US began pushing through legislation that could create about \$25 billion in energy tax credits and other incentives as part of a major effort to revive the ailing US economy. Additional Congressional committees are at work on other parts of the economic stimulus package that could boost energy spending by more than \$140 billion over two years. One of the big items is \$6.9 billion in block grants to local government to help reduce carbon emissions.

International Oil Daily

The Obama administration will review the five-year Outer Continental Shelf lease plan for oil and natural gas drilling formulated by the outgoing president, interior secretary Ken Salazar commented in January. "We will review the five-year plan," he told reporters, "and make some decisions on how to move forward."

Platts

Pipe connections

President Obama pledged to "prioritize construction" of an Alaska natural gas pipeline. Many questions remain on the prospects for an Alaska gas pipeline. TransCanada continues to pursue its Alaska Highway Pipeline and recently earned a state licence to do so. BP and ConocoPhillips continue to seek federal approval from the Federal Energy Regulatory Commission, and recently filed a right-of-way application. The energy commission has recommended that the two competing proposals eventually merge.

Natural Gas Week

Prospects for a pipeline to ship abundant North Slope natural gas reserves to US markets are dim due to free-falling energy prices. Since the 1970s, government and industry officials have pursued a North Slope pipeline that would accompany the Trans-Alaska Pipeline System. Economic challenges have to date kept the dream on the drawing board, but two groups are now pursuing new plans.

Reuters

Energy market analysts addressed an audience hoping for a multibillion-dollar Alaska natural gas pipeline and the news was not good. The global economic crisis has slashed demand for natural gas and dimmed chances for an Alaska pipeline, they said. The line also faces expanded competition. A BP spokesman also delivered a grim overview of gas markets at the Alaska Support Industry Alliance conference.

Associated Press



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Upfront

SCHRÖDER JOINS TNK-BP BOARD

Former chancellor of the Federal Republic of Germany, Gerhard Schröder, has agreed to become an independent director of TNK-BP. The new appointment comes as part of a restructuring of the company's main board, which aims to improve the balance of interests between TNK-BP's 50:50 owners, BP and Alfa-Access-Renova (AAR).

Two other independent directors have also been appointed—Alexander Shokhin, president of the Russian Union of Industrialists and Entrepreneurs, and James Leng, chairman designate of Rio Tinto. The rest of the board will consist of four representatives from each of the two shareholder groups.

Since the joint venture was agreed in 2003, TNK-BP has become Russia's third largest oil company, meeting 5% of Europe's oil demand, and increasing capital expenditure by 450% to \$4.4 billion.

Commenting on Herr Schröder's acceptance, BP chief executive Tony Hayward said: "The counsel of such a distinguished statesman, who brings enormous geopolitical experience and a history of strong relationships with Russia, gives me confidence that the next chapter in the progress of TNK-BP will be good for all shareholders and for Russia."

GRASSROOTS SUPPORT FOR AIDS PROJECT

BP Lubricants has become a supporter of South Africa's Grassroot Soccer. The not-for profit organization uses the popularity of football to teach young people about AIDS. By giving children the knowledge, skills and support to remain HIV free, the hope is they will also act as catalysts for social change in their communities. "This is just the start of our support for an important social programme in South Africa throughout our sponsorship of FIFA World Cup 2010™. We will be entertaining thousands of customers and we feel it's important that we contribute positively to the local community, too," says Des Johnson, global brand director.

FOR THE RECORD

Century in photos

To commemorate its centenary, BP has produced a photographic history book called BP100: The First Hundred Years in Pictures. Most employees will receive a copy over the coming weeks. If you are a BP retiree and would like a free copy of the book, please send a request, with your full name and address. For North America: BP Centenary Requests, c/o Network Global Logistics, 9820 W Foster Avenue, Rosemont, IL 60018, USA. For Rest of World: BP100 book, Air Action, International Distribution Centre, Crabtree Road, Thorpe, Egham, Surrey, TW20 8RS, UK.

And, don't forget Horizon is interested in hearing your memories of BP to go in our centenary section later this year. Email horizon@bp.com or write to Lisa Davison, Horizon, Building 200, Chertsey Road, Sunbury on Thames, Middlesex TW16 7LN.

CMI VENTURE EXTENDED TO 2015

BP has renewed a joint research partnership with Princeton University, US, that identifies ways of tackling the world's climate problem for a further five years. It will support Princeton to at least its current level of funding for the years 2011–2015.

The grant reflects the success of the Carbon Mitigation Initiative (CMI), which has had a significant impact on the climate change debate. Launched in 2000, the project has produced new practical approaches to managing the carbon dioxide emissions that contribute to global warming.

BP's original 10-year commitment initially funded the programme at \$1.5 million a year and later increased it to more than \$2 million. CMI supports scientific, technological and environmental research into safe, effective and affordable solutions to climate change.



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ENERGY CENTRE GETS GO-AHEAD

BP and the Chinese Academy of Sciences have agreed to establish the Clean Energy Commercialization Centre (CECC) in Shanghai, jointly investing \$73 million.

The CECC will draw on the expertise of both partners to integrate energy-related technologies—such as coal gasification and conversion—into competitive manufacturing systems.

Speaking at the signing in Beijing, BP chief executive Tony Hayward said: “This centre has the potential to play a significant role in delivering local energy solutions to address issues that have a global impact.”

NEW LEADER FOR BP AMERICA

Lamar McKay now holds the reins of BP America as its chairman and president, replacing Bob Malone, who recently retired after a 34-year career with the company. As well as being the top BP representative in the US, McKay remains a member of BP chief executive officer Tony Hayward’s executive management team.

Noting Malone’s contributions to the company, Hayward says, “During a time of external turmoil, Bob’s commitment and support to improve our US operations and restore the confidence of employees, community leaders, regulators and members of Congress in BP has been a significant part of our recent success.”

In a note to US employees, Malone gave high praise and thanks, saying that “no leader could have been more honoured to lead the amazing men and women in the US organization.”

McKay, a graduate of Mississippi State University, is no stranger to BP America. Prior to leading its special projects team, he served as executive vice president and chief operating officer.

PAST TIMES JANUARY 1971

BP staff bring out their valuables

Ever wondered if that family heirloom sitting at home is really a priceless artefact? Back in 1971, staff at BP’s Britannic House headquarters, UK, had the opportunity to find out, when they were invited to bring their most valuable pieces of silver to work to be appraised by Arthur Grimwade, director of silver at auctioneers Christie’s.

The event, which featured in BP Shield International, was a great success. Among the pieces Grimwade examined was a George II coffee pot dating from 1742, which he valued at \$900 (right). Other finds included a trefid spoon (1695) and a pepper pot in the form of a jester (1881).

INFLUENTIAL ACCOLADE

BP’s group head of research and technology, David Eyton, has been selected as one of the top 25 most influential figures in the world of engineering and technology by Engineering & Technology (E&T) magazine.

E&T—the official publication of the Institution of Engineering and Technology (IET)—is celebrating its first anniversary by publishing its list of ‘people who make it happen’ in a range of fields including consumer technology, mechanical design and academia. Those selected are now part of an online poll open to the public until 31 March, with the results to be announced in a later issue of E&T.

Eyton is accountable for technology strategy and its implementation across BP and conducting research and development in areas of corporate renewal. In this role, he also oversees the technology capability of the company. He says: “The world faces unprecedented energy challenges today, so it is not surprising to see this reflected in the IET’s list; and, of course, it is a real honour to have been selected on behalf of BP.”

FAR EAST TEAM GOES GREEN

BP Singapore has been awarded green office label certification by the Singapore Environment Council. The GoGreen team ran employee events, such as screenings of the BBC’s Planet Earth series and environmental campaigns to promote the 3Rs—reuse, reduce and recycle, to create a more environmentally aware organizational culture. The programme also helped remove more than \$100,000 of costs.



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CONVENIENCE STORE SALES GET A FESTIVE BOOST

Sales of alcohol, confectionery and non-food items led the way as BP's UK convenience stores reported a successful Christmas trading period. The 250-strong estate of BP Connect and Express stores saw an increase of 5% in like-for-like sales during the three-week period over Christmas and New Year.

"In terms of shop sales, we had a strong Christmas and New Year across all our store formats," says Richard Harding, BP's UK convenience retail director. "In the light of the challenging trading environment, we are delighted with the way things have gone in our stores. The success is driven by being convenient for customers, having a great range of products and services, and a really strong promotional programme."

IN WITH THE SMART SET

As part of its renewed collaboration with top universities around the world, BP is deepening its relationship with the University of Cambridge, UK. In signing a memorandum of understanding, the two seek to pursue science and research in partnership.

David Eyton, BP's group head of research and technology, says, "Cambridge is one of the world's top science and engineering universities. We want to investigate further opportunities to work together and to make the most of the commitments we've already made to recognize the opportunities open to us both."

Cambridge is the top UK recruiting source for BP's new talent. The company annually provides contributions to Cambridge—its 2009 funding towards research scholarships and undergraduate support for the university is around \$850,000.

LIBYA PILOTS NEW SEISMIC TECHNIQUE

BP's Libyan exploration project has begun a 13,000 km² (5,000-square mile) seismic acquisition programme in the deserts of the Ghadames basin.

The survey is unique in that it involves the first-ever full deployment of a new proprietary seismic technique called 'Integrated Simultaneous Sweeping' (ISS). BP believes ISS will mark a step-change in productivity in land seismic acquisition, compared to more conventional methods.

Ghadames is one of North Africa's most prospective hydrocarbons basins, and extends from Algeria (Illizi basin) into Libya and southern Tunisia. Around 25 billion barrels of oil equivalent have been discovered in the basin to date, through approximately 350 discoveries—80% of which have been in Algeria.

WELL HEAD PRESENTATION

Historic moment as F7 wellhead goes home

On 16 December 2008, BP chief executive officer Tony Hayward (left centre) formally handed over wellhead F7 to officials from the National Iranian Oil Company in commemoration of the 100th anniversary of the first commercial oil discovery in the Middle East.

The wellhead was completed in November 1911 and flowed without interruption for 15 years in Iran, producing approximately 53 million barrels of oil in its lifetime.

In 1969, it was put on display at BP's London headquarters, Britannic House, where it remained for many years.



Profile

The Horizon interview
REPORT BY Helen Campbell

A CLEAR VIEW FORM THE TOP

With a reputation for straight talking, John Mogford shares his direct approach to leading BP's Refining business. Photography by Richard Davies and Joshua Drake

When clarity is required, there can be few people less ambiguous than John Mogford, BP's head of Refining since March 2008. Also recently appointed chief operating officer of the US fuels value chains (FVCs), John has responsibility for the performance of that region's newly integrated downstream business, as well as the delivery of safe and reliable operations throughout BP's global Refining portfolio and in terminals and pipelines.

A big man who easily commands a room, but with a relaxed style, John originally hails from Nottingham and gained his degree at the University of Sheffield. Both UK cities are well known for their sturdiness and resilience, and John personifies both. After more than 33 years with BP, primarily in upstream, colleagues say the level of widespread trust and respect he has quickly earned in the Refining community is remarkable.

Although John himself jokes that a mechanical engineer will "never truly be accepted" by the chemical engineers of the refining world, his solid operations experience on fields including the North Sea's Forties field, and his frank and no-nonsense approach, make him a safe pair of hands to steer Refining through a testing time. "The past few years have been very difficult for Refining, post-Texas City," he says.

"The business environment has deteriorated as demand has dropped off due to people changing their driving habits in 2008, and with the global slowdown in economic activity. There is a lot of new refining capacity coming onstream and refining margins will remain low for the foreseeable future. What this means is that operational excellence and efficiency are more important than ever."

BP operates 11 refineries, and has shares in a further six. This year, as the remaining refineries implement BP's Operating Management System (OMS)—of which John was an architect—the focus will be on streamlining business processes, efficient planning and clarification of accountabilities. Pointing out that refining is "not run on milestones and big, single, silver-bullet decisions, but on thousands of people making decisions every minute, every hour, every day," John says what is needed is greater clarity of roles, accountabilities and of decision-making rights, to ensure individuals fully understand responsibilities and boundaries.

"When I first joined Refining, I was surprised at the number of people giving instructions to the refineries—refineries which did not always have the confidence to say 'no, we can't do that'," he says. "There was considerable lack of performance caused by people being unsure whether they could make a decision."

"Performance expectations and scrutiny are higher these days, so it is very important that we get the right input each time and that everyone knows whose is the final call. My view is that when people are clear that others in the organization are relying on them to make a decision, then they have an obligation to make it."

Despite the difficult commercial environment and setbacks of the past three or four years, many BP refineries have been performing well. Safety standards and plant availability are up, while incidents, such as fires or loss of containment, and unplanned maintenance are down. Additionally, Refining won two Helios Awards in 2008. Success breeds success and increased knowledge sharing will help to ensure best practice all round, John says, adding that this has been commonplace in drilling in Exploration & Production but limited in Refining, partly because of the portfolio's varied heritage. "We have always talked about making the most of BP's size and scale and we have examples of where that is quite easy, but scope is something we have struggled with," he says. "We have seven different heritages and the resultant self-sufficiency has led to a lot of bespoke, inefficient solutions and made it difficult to transfer things from one refinery to another."

"There is a tremendous upside from learning from each other and, over the past nine months, we have been promoting more commonality and stopping duplication. We have seen Gelsenkirchen lending people to Texas



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City; Lingen, Gelsenkirchen and Rotterdam working together to approach OMS in a consistent way; and the North American refineries collectively agreeing on a standard control of work process.”

On a bigger scale, the formation of the FVCs signifies a major strategic shift towards refineries becoming much more integrated into the downstream business, and these stronger regional organizations will allow optimization and reduce the bureaucracy that John says has been endemic. All the while, safety remains the watchword, and John’s previous role as head of Safety & Operations equips him with a solid understanding of the fine balance between risk reduction and business performance.

He readily admits to a reputation for being unyielding, and when he makes a decision there is little room for changing his mind. But not only do people always know where he stands, John has that magical ingredient essential to being an effective leader—the ability to exercise authority without being authoritarian. His decision-making is firmly founded upon a real love of people and considerable effort to meet and talk to them.

He has made 27 site visits in less than a year, including every BP-operated refinery at least once and Texas City and Whiting four times. But he isn’t just another head office visitor flying in for a whistle-stop tour around the tidy bits. “I like walking around the plants talking to maintenance people and control room operators about what’s on their mind and what we’re trying to do as a company,” he says. “I particularly like meeting people just entering the company and I have very much enjoyed lunches with the CAPs people [high potential individuals on BP’s career advancement programmes] at Castellón, Spain, Carson, US, and Bulwer and Kwinana, Australia.”

Sleeves are rolled up at Refining leadership meetings, too. At John’s own instigation, no more plush city-centre hotels for them. When refinery managers get together, meetings are now close to the sites themselves. This, says John, means the refinery managers can see other plants firsthand. Lingen, Gelsenkirchen, Rotterdam and Texas City have hosted colleagues from other sites, and managers will soon visit Castellón.

John says the best advice he ever received was that an effective leader always knows which side of the table to be on.

“Leaders have two roles: one is to set expectations and standards when you’re on one side; the other is to be on the same side as your team, to support and encourage them to deliver,” he says. “I think people are much more comfortable when they know which side of the table you are on. But you do need to be able to be on both sides if you want to lead.”

With some eclectic tastes, including seemingly opposing passions for both rugby and opera, John says it is advice he sticks to.

See page 32 for a full report on the rollout of OMS across BP’s sites



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Full year results

REPORT BY Amanda Breen

Year end stats highlight good progress

With the end of year results now released, group chief executive Tony Hayward shares his thoughts on BP's successes and challenges

With record annual profits announced for 2008, BP is firmly back in competition with its peers and in a position to start shaping the energy industry again, according to group chief executive Tony Hayward.

Speaking at a series of townhalls, Hayward thanked staff for their efforts in turning around the company's performance following a challenging couple of years. Improved operational performance yielded strong results, with a replacement cost profit of \$25.6 billion for 2008 year-end—up 39% over 2007.

In his quarterly interview for Performance in Perspective (PiP), he said: "2008 was a great year for BP. And I'm going to use this opportunity to thank everyone who participated in getting our competitive performance back in shape. We've closed probably 80 or 90% of the gap with most of our peers."

This message was reiterated during a townhall at Sunbury, UK, where Hayward highlighted how BP has re-established its position, 'back in the pack' once again. "BP is back. Our agenda is really working and we are making good progress. We are in the middle of the pack now and we need to think about how we are going to go after the leaders."

Questioned at Sunbury as to what would constitute success in the current climate, Hayward told his audience: "For me, success is ensuring we hold our course and invest further. BP is in really quite good shape and we need to make certain we stay in good shape by focusing hard on efficiency, actively managing our cash costs, going after the supply chain and getting third-party costs in line with a \$40–50 a barrel world." The company's costs fell in the fourth quarter and driving deflation into the supply chain is a key priority. "We need to embrace it, seize it and make it happen in our supply chain. As oil prices went from \$40 a barrel to \$140, our costs—and those across the industry—doubled. Now, we need to recalibrate this cost base. Input costs have fallen dramatically and we need to make certain that shows up in the goods and services we procure."

The progress made in the past 12 months came from all areas of the business. Exploration & Production (E&P) had its most successful year in a decade, with major discoveries in Angola, Egypt and the Gulf of Mexico, and new access to resources such as shale gas in North America. Refining availability increased to 91% in the fourth quarter, its highest level since early 2005, thanks in part to a return to near full capacity at Texas City and Whiting. There is still more to be done though, says Hayward, to reach the industry's leading levels of around 95–96% capacity. Alternative Energy's portfolio has been focused to run a smaller number of projects "really well". Building a biofuels base in Brazil will represent a significant investment of \$5–6 billion over the next five to 10 years, Hayward told his Sunbury audience.

Despite the exceptional year-end results, those for the fourth quarter were down (-24%) compared to the same period last year. The figures reflected the continued downturn in the global economy with oil and gas prices falling sharply from record highs earlier in the year. The complexities of the Russian taxation system added to these losses, landing TNK-BP with a bill based on third-quarter, \$100 a barrel prices, rather than \$50. The losses were "a very strange one-off event", Hayward said.

Overall, BP is well-positioned to sustain its course through difficult times. "While the oil price fell, our underlying performance was actually very strong. And that gives us a lot of strength and confidence as we proceed into 2009, which will be a more challenging period," Hayward told PiP.

Other objectives for 2009 are the continued investment in safe and reliable operations; commitment to the dividend and investment in E&P as the principle engine for growth.



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People will remain at the forefront of the agenda. In terms of getting the “right people, right place, right skills”, Hayward pointed to succession and development plans as progress, with the aim of building deep professional capability within the group.

Given the difficult external climate, questions at Sunbury and St James’s Square turned to rumours about pay freezes. Hayward was quite clear on this matter: “All band C and above will have pay frozen this year. Everyone else will be judged on the external market. If the salary is below the external rate then pay will be adjusted accordingly.” He made it clear that while there was not a blanket pay freeze across the company, the fact that salary levels externally were not moving in 2009 meant that many people would not see a pay rise. However, he did stress that BP remained committed to rewarding performance through the Variable Pay Plan (VPP) system, and added that there will be good VPP rewards for people in those parts of the business that performed very well.

There was plenty of audience participation at two townhalls in Houston as well, with questions ranging from the impact the new US presidential administration might have on BP, to the VPP matrix implemented in 2008. In particular, Hayward addressed questions about the balance of BP’s US investments in upstream oil and gas projects, and making today’s oil prices profitable by expanding downstream margins and getting efficiency by managing supplier costs.

In what will undoubtedly be a difficult economic environment, Hayward believes BP is well-placed to weather the storm and even take advantage of the current climate to put capital onto the balance sheet. “What I would say is that the past four years have been a terrible time to invest in this industry, because of the inflation. If we can get the cost structure back in shape, it’s a very good time to put capital onto our balance sheet and invest for capacity and growth into the future. I don’t believe the future has been cancelled; it may have been delayed by a year or two. When the world starts growing again, demand for energy of all forms will be very strong.”

FULL YEAR RESULTS AT A GLANCE

Replacement cost profit (post-tax)

\$25.6 billion (+39%) compared to full year 2007

Underlying profit (post-tax)

\$26.2 billion (+39%) compared to full year 2007

Operating cash generated

\$38.1 billion (+54%) compared to full year 2007

E&P replacement cost operating profit (pre-tax)

\$39.6 billion (+46%) compared to full year 2007

R&M replacement cost operating profit (pre-tax)

\$3.3 billion (-16%) compared to full year 2007

COMPETITOR PERFORMANCE YEAR END

To learn more about BP’s full year results, see Performance in Perspective (PiP)—the quarterly results and strategy programme, featuring interviews with Tony Hayward and the executive team. To view PiP online, visit http://clients.world-television.com/BP_PiP/

To order a multi-language DVD, email ben.mayfield@uk.bp.com

Press and market respond to results

The Guardian

“BP yesterday pledged to protect its dividend payments after confirming a £7bn bumper payout to shareholders – which now accounts for more than a tenth of cash returned in the UK market.”



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The Daily Telegraph

"Six new production projects came on stream in 2008 – and its Thunder Horse platform will soon be ramped up to full production. The turbulent time suffered by its Russian venture TNK-BP also seems to be easing, so BP looks like it is leaving behind some of its recent troubles. All it needs now is an oil-price recovery."

Oppenheimer

We think operating results, including strong production outlook and reserve replacement data, support our opinion that BP has turned the corner and is back on track.

Deutsche Bank

Faced by a number of charges to profits both above and below the EBIT line, the Q4 headline probably did little to reflect the operational improvements that we believe are increasingly apparent at BP. Assuming that these items are largely one-off they suggest that base profitability going into 2009 is likely better than at first appears.

Morgan Stanley

The restructuring in the downstream and the cost saving program continue apace. In R&M, BP claims that it has closed the performance gap by c. \$2 billion - we think there should be more to come with Texas City now at full economic capability and reversing losses in 2008.

Exane BNP Paribas

We find BP's dividend yield compelling and believe that despite the present USD40/bbl oil price environment, that the dividend is affordable and safe given the strong balance sheet, ability to continue funding itself in the bond markets, operational momentum and potential for greater cost reductions.

SHAREWATCH

Since the last Sharewatch, just two months ago, the economic outlook across the world continues to change. 2009 appears to offer little sign of recovery for the stock markets, and whilst the pace, and volatility, of the change may not be as extreme as was experienced in the second half of 2008, the recession looks set to continue to deepen across most of the world.

Oil prices ended 2008 at levels not seen since 2004, with the Brent price bottoming out at the end of December at around \$36 per barrel. Since this point prices have recovered somewhat, continuing to fluctuate within a \$40 to \$50 band, driven in principle by the market perception of the success, or otherwise, of continued OPEC strategy to cut production as well as the regular updates on crude inventory stocks in the US, both key drivers of the supply-demand picture. Oil stocks will continue to be dictated, to a large extent, by the short-term direction of the energy markets, which are probably less clear than ever.

Within this macro environment the BP share price continues to outperform the market by between 30 to 40%, with investors continuing to favour the strength of integrated oil majors as offering the best combination of risk and return, as well as resilience to the tough operating conditions. Despite a tough Q4, and results that came in below consensus causing a brief (over) reaction early in the day, BP has held onto its premium supported by the sector leading dividend yield, currently at more than 8%. At the time of writing, BP was trading at £5.03 in the UK and \$44 per American depository receipt (ADR).

Looking ahead, and within a difficult environment, the investor community continues to value the upside seen in BP's strong balance sheet, relative strength within the debt markets, operational momentum, cost reduction agenda and commitment to dividend. With investors increasingly looking for stability and certainty, BP's commitment to these factors remain a key driver in the market support and valuation of its stock. All eyes will now turn to the Strategy update season, with BP due to present to the market on March 3rd.

For more information on trading conditions, see www.bp.com/tradingconditions and www.bp.com/investors.

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Group

LLANDARCY REMEDIATION

Coming full circle

Ian Valentine asks the team behind the Llandarcy remediation project about confronting the past, winning awards and what is going to happen next

The winner of this year's progressive Helios Award was the Llandarcy remediation project in South Wales. As a result of the project, BP's first crude oil refinery site in the UK will be developed into an urban village, creating the opportunity for around 3,000 new jobs in one of the country's most economically depressed areas.

Sabine Dietrich, remediation management's vice president for operations in the Europe, Middle East, Africa & Asia Pacific regions, says that the award meant a huge amount to everyone involved.

The legal constraints on this unique case often required innovative solutions. "No other company has attempted to transfer its liabilities and turn a brownfield area of this size into an urban village in Europe, so we have been working from a blank sheet of paper," she says. "In particular, the close interaction between the team and other parties involved was crucial. We have been operating without any precedent, so everyone involved has shown great inventiveness and flexibility in finding solutions. It would have been too easy to back down from what seemed insurmountable problems, or to do a mediocre job. Instead, we have been able to transfer our liabilities at Llandarcy and can now leave with our reputation enhanced and potential future opportunity to do similar deals based on the experience established."

David Toman, remediation management's general manager for regeneration, and the project manager, says the award is a huge boost. "You think you are doing a good job, but sometimes it takes a high-profile award to convince you," he says, stressing that while BP was statutorily obliged to ensure that Llandarcy posed no environmental threat to the local habitat—which includes areas of 'special scientific interest'—the company need not have gone further. "With current legislation, we could have just sat on it," he explains. "Just maintaining the site would cost us between \$5–10 million a year but as far as the local community was concerned there was nothing to stop us from just walking away. That goes against BP's charter of corporate responsibility and we wanted to leave with our dignity intact. So the urban village of Coed Darcy was conceived."

In order to sell the plans for Coed Darcy to developers, BP joined forces with the Welsh regional government and the Neath Port Talbot County Borough Council, and received royal approval from the Prince's Foundation for the Built Environment. "Prince Charles has taken a personal interest in the project," says Toman, who talks regularly with the Prince about progress. "It is very close to his heart and he sees the village as a legacy of his own passions for urban development. The houses will be sympathetic to the environment and energy efficient, but they will be affordable, too. We are also determined that the layout will be 'pepper-potted', to create a melting pot of privately owned homes alongside housing association dwellings, so that we don't end up with ghetto-style segregation."

Aside from 3,000 new jobs in the construction industry over the next 20 years, Coed Darcy will also start to create other jobs, most likely in the service industry. It will also have three primary schools and a secondary school. The town's layout will encourage walking rather than car use, with the vision that "nobody will have to walk more than 10 minutes to get a carton of milk or a pint of beer. The exciting part is that the village itself only takes up 400 hectares [1,000 acres] of the brownfield site," says Toman. "We are also now discussing the remaining BP land in Wales. There are still 1,000 hectares [2,500 acres] that could be brought back to beneficial use, which could include a second campus for Swansea University, itself attracting more employment to the area. Swansea plans to use this as a critical part of its long-term aspirations as a first-rate university at a global level."

Llandarcy had a proud heritage within South Wales, which has relied on heavy industry since the 1700s, when it was famed for its steelworks and coal mines. The refinery was commissioned by Sir Winston Churchill while he was First Lord of the Admiralty in the early 1920s, as he wanted the British Navy to have access to fuel in



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times of Middle Eastern turmoil. Although as many as 3,000 workers were employed during its peak in the 1970s, the plant proved too small to meet modern demands. In 1997, Llandarcy was closed down after 75 years of continuous service.

The refinery's made-up name comprised Llan—the Welsh word for town or parish—and the surname of BP's founder, William Knox D'Arcy. Many of the original inhabitants who set up the refinery and nearby village were Scots who had come south with expertise in the shale oil refineries, such as Pumpherston near Edinburgh. BP was determined to set up its workers in a new village, so the original Llandarcy site was ahead of its time, albeit that the workers were accommodated on one end of the estate and managers were given their own, superior lodging elsewhere. "It is a lovely twist, though, that the architects today borrowed heavily from the original plans when they created the plans for Coed Darcy," says Toman. "A lot of what the planners did in the 1920s made more sense than our more modern techniques. So, in a way, the village has come full circle."

The true financial value of the refinery's remediation is difficult to estimate, as the knock-on benefits may be enjoyed by the rest of BP for many years to come. "This has been a significant success within the company itself," says Dietrich, "because so few projects fall into both the 'operational' and 'business-generating' categories. Not only have we cleaned up after ourselves, which we had to do, but we have also found a means of decreasing the financial burden of doing so. And now, whenever BP pitches for a new contract anywhere in the world and the host asks what will happen to the site when we leave, we can show them what happened at Llandarcy. They will know that BP won't just walk away."

GRADUATE DEVELOPMENT

Procurement graduates set out their stall

Television show *The Apprentice* has inspired a graduate programme designed to develop procurement and supply chain management graduates. Clinton Thompson reports

Procurement and supply chain management's (PSCM's) freshest talent recently raised \$10,000 in a series of events that make up part of its annual graduate immersion programme, which aims to develop procurement capability across the organization. Modelled on the popular television show *The Apprentice*, the events raised funds by raffling off a bicycle built by US graduates, with parts sourced using BP's procurement processes, combined with proceeds from the sale of various goods 'procured' and sold at London's Portobello Road market by UK graduates.

As part of its graduate programme—which sees the recruitment and development of graduates into skilled PSCM professionals over a three-year cross-segment rotation basis—the immersion programme focuses on personal development within functional competencies, such as strategic sourcing, effective negotiation and leadership skills.

In a tough global economic climate where BP's businesses are having to position themselves tactically to accommodate volatile operating environments, the responsibilities of the PSCM function are perhaps more important than ever.

PSCM acts as an interface between businesses and third-party suppliers of goods and services around the world. At any given time, this could mean sourcing suitable suppliers to ensure technical specifications meet BP's standards, to driving down operating costs by renegotiating contract terms as prices fall in the slowing economy.

Programme manager Jane Hoskisson oversaw the fundraising activities in the UK and US. "In designing the programme, I wanted to get a balance between developing practical procurement skills and providing an opportunity for the graduates to create high performing teams in a fast-paced situation. Taking them out of their normal environment allowed us to do something slightly different, while still providing practical learning opportunities. In a dynamic environment, it was fascinating to observe the graduates adapt their strategies to capitalize on the harsh realities of the marketplace," she says.

Given a selection of potential goods, including eco-friendly carrier bags, flowers and wicker baskets, 19 UK graduates were required to work in teams to create, and present, a business plan for the commodities they would most like to source, procure and sell at Portobello Road market.



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Teams were awarded commodities based on their business cases, considering key factors such as market research, financial analysis, negotiations, supplier management and other elements of effective procurement.

“It was especially valuable being on the other side of the procurement process, having to develop and implement a sales and marketing strategy,” says Dave Armstrong, a second-year graduate from Refining and Marketing (R&M). “It’s often easy to focus on the specialist activities that make up procurement—this was a good opportunity to step back and look at how procurement is triggered by business needs.”

“Selling products in the marketplace was hard work,” adds third-year graduate from indirect procurement Jessica West, “but very rewarding as all the profits went to charity. It provided a good opportunity to experience things from a different perspective and really demonstrated how PSCM needs to work collaboratively with the businesses.”

Building on similar principles, the US group of 23 graduates was required to source all the components needed to construct a working bicycle using BP’s sourcing tool—an online application that facilitates the associated activities for both buyers and suppliers.

Using BP’s internal approach to sourcing, four teams each developed a business strategy, including ‘should cost’ models for the parts they required, which they later delivered to members of the governance board. Used as a tool in negotiations with suppliers, ‘should cost’ models break down all the elements of a given commodity or service. In BP terms, for example, this could provide transparency into any element it takes to construct facilities, be they storage tanks or operating equipment.

Armed with intelligence on what the bicycle parts should cost, the teams approached suppliers and successfully sourced the required parts. In a planned twist to test the group’s ability to react quickly to changing business demands, they found themselves missing one critical part.

As a consequence, explains Abdulahi Sufi, a second-year graduate in Exploration and Production (E&P), the group worked together effectively to source the required commodity: “This unpredicted twist not only showed us the importance of critical thinking in the business process in order to rationalize and examine our business requirements, but it also highlighted the importance of working cohesively as a team to achieve the best possible outcome for the organization.”

The overall challenge allowed the graduates to experience the end-to-end procurement process first-hand, highlighting the importance of getting business specifications right when communicating with suppliers; responding to shifting business requirements; planning and executing a sourcing strategy; engaging in negotiations; and quality assurance and control.

After the bicycle was successfully assembled, the group held a raffle at BP’s Naperville complex, with all proceeds going to charity. “The programme was a great opportunity to interact with fellow graduates, regardless of what programme year they are in, or what part of the organization they work for,” says second-year R&M graduate, Ryan Rinnan.

After attending part of the UK activities, vice president for R&M procurement Chris De Luca says she was incredibly impressed with the “calibre, dedication and enthusiasm of the graduate talent across PSCM.

“Effective procurement systems are extremely important in companies of the size, scale and scope of BP, especially when you consider the challenging economic environment businesses are currently operating in.

“We are working collaboratively across the organization to develop a highly capable procurement function—if we are going to extract the maximum value for BP in this area, we need the right people with the right skills, now and in the future.”



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BP ENERGY LAB

Virtual steps to a cleaner world

A new website has launched that draws all BP's environmental impact measurement tools together to help users learn more about ways to reduce their carbon footprint

Following the enormous success of its carbon calculator, BP has developed a new online portal—BP Energy Lab—which allows individuals to access a number of its existing online efficiency and environmental impact measurement tools, along with some innovative new ones.

The original carbon calculator was launched in 2005 as an internet-based tool to help people calculate the impact of their lifestyles on the environment and offer ideas on how to reduce that impact. The tool received more than 1 million hits in its first six months and enjoyed a 70% completion rate. Since its launch, other corporations, governmental agencies and environmental non-government organizations have introduced their own versions.

The BP Energy Lab features an updated version of the calculator, with many of the original features upgraded. It takes just a few minutes to complete, asking users for information including their country, size of their house and number of occupants, the number of short- and long-haul flights taken, and car and train miles travelled. It then calculates the user's energy consumption in kilowatt-hours and the carbon footprint in tonnes, weighed against the country average. Visitors can also access a well-stocked 'Energy Facts' database, take an energy quiz, or find energy efficiency tips.

BP Energy Lab is designed to be a one-stop website for all BP's low carbon and efficiency tools, and encompasses an updated 'targetneutral' section, which builds on the success of the programme BP first launched in the UK in 2006. The offset initiative asks drivers to reduce, replace and neutralize their vehicle's environmental impact by helping to fund emissions reduction projects. It has neutralized more than 80,000 tonnes of carbon dioxide emissions to date, through projects ranging from wind energy in India to composting in Australia.

There are new elements to the site as well, including: the SimCity™ 'Green Streets Challenge', where users design a town and build its economy using alternative energies; and the 'Green Driving Test'. The latter recently challenged several British journalists to drive as many miles as possible, using the same car and route, on exactly one litre of BP Ultimate unleaded fuel. Results show that it is often the driver—not the car—that has the greater effect on the fuel consumption and outputs of a journey.

Meanwhile, Jackson the dog and friends are on hand to help spot ways to save energy at home, via the 'Energy Hero' game. Users can click to switch off lights, the television and tumble drier, or put 'waste' into the recycling bin—the hope being that users will transfer this into their daily lives.

While the whole site has a clean, engaging look and feel, employing a friendly animated 'professor' to help users navigate the tools, its developers have taken advantage of technical developments to bring it up to date. "The Energy Lab calculator is built on the same questions as the first version, but is more innovative, with fun animation and interactive graphics," says Kathy Leech, BP's director of brand communications. The site also aims to address different societal needs associated with energy, says Mukta Tandon, BP brand communications manager. "In the US, for example, the great concern is energy security, while the predominant issues in the UK are cost and environmental impact."

The BP Energy Lab hosts information about BP's environmental policies and performance, including its Sustainability Report, which details what the company does globally to minimize its own environmental impact. "Talking about energy is not just whether we are switching lights on and off," says Tandon. "It is about the fuel in our cars, the amount of flying we do, every aspect of life, and the relationship between our lifestyles and our carbon footprint. Anybody can access BP Energy Lab, but it is particularly aimed at those already concerned about these issues, and who can see the difference they could make and effect change in others."

Visit www.bp.com/energylab



Working life

REPORT BY Paul Rimple

Dogged determination

Protecting pipelines relies on many qualities, not least an excellent nose

It is 11am and, at marker 85, Tasha's nose is low and into the wind as she zig-zags along the Western Route Export Pipeline (WREP) in Georgia. The wind chill makes the 0°C (32°F) air feel much colder, yet for Tasha, a three-and-a-half-year-old Alsatian mix, the conditions couldn't be better.

"In the summer, the dogs work much slower because it's hotter and the air is full of odours," says handler Denis Nozeczowski, a local trainer with four years of experience. "They alternate maybe every 150 metres [500 feet] instead of 500 [1,600]," he adds.

We are waiting in a car several hundred metres ahead of Tasha and her handler Giorgi Krialashvili, a trainer for nine years. Nozeczowski's charge, Nupon, a two-year-old Alsatian mix, will relieve her friend for the next stretch as soon as Tasha digs up an oil soaked rag Nozeczowski buried in the snow.

BP first explored the use of sniffer dogs in Georgia in 2004. As results continued to be positive, the choice was made to commission two Belgium-trained hydrocarbon sniffers in the spring of 2008.

Their primary function is to detect illegal 'hot taps' along a 150km (90 mile) section of the WREP. However, before the dogs were even actively engaged on the pipeline, they inadvertently discovered a tiny leak in a non-BP domestic gas line. Then, within hours of her first day on the job in September, Tasha detected a hot tap on a remote portion of the WREP. The following day, she identified another. "They have been a great enhancement to our detection capability," says geo-exports operations manager Alistair Liddle.

Sniffer dogs have proven their value, especially in cases when the usually efficient, high-tech monitoring devices are limited. For example, intelligent pigs (pipeline inspection gauges) won't work unless oil is flowing through the pipeline. Similarly, horse patrols cannot always identify breaches in the pipeline as criminals have become extremely good at camouflaging the hot taps.

Because sniffing demands a lot of brain work from the dog, the Belgium trainers recommended that Tasha and Nupon patrol a maximum of five km (three miles) a day in three-days-on one-day-off shifts. They live like VIPs in a spacious modern kennel in a rural suburb of Tbilisi and are cared for by their handlers, who rotate shifts with the two even after the fieldwork is done. While the kennel owner cares for them overnight, the dogs are fed only by their handlers.

"Good girl!" Krialashvili says to Tasha as she finds the oil rag and her ball. She is rewarded by playing 'fetch', her favourite game, although she is not always willing to give the ball back. She is given water and a treat before jumping into her carrier in the car while Nupon starts work exactly where Tasha left off. We drive ahead to bury the rag and Nupon's ball. An armed security patrol follows us as a precaution against criminals and unfriendly animals.

Pipelines team leader Tariel Margvelashvili says the dogs will likely work five to six years, possibly longer, and that the kennel owner is currently training local dogs and introducing new methods more suited to Georgian conditions. "Obviously, two dogs are not enough for the whole pipeline," Margvelashvili says.

As Nupon approaches marker 90 she catches the scent of the rag and tugs harder on her leash. She digs up the rag and Nozeczowski throws her ball. We laugh as she scampers after it. Three hours in the field and no hot taps. It was a good day. Nozeczowski follows Nupon to the car and she jumps into her carrier. "Good girl!" he praises.



People

PROJECT ENTHUSE

Putting the spark back in to science

As the number of British schoolchildren studying science-based subjects continues to dwindle, BP gets behind an innovative new project aimed at reigniting interest in this field. Photography by National Science Learning Centre

BP is a founding sponsor of a unique, major new project—Project Enthuse. Over the next five years, it will enable science teachers from every school in the UK to receive high-quality, continuing professional development training at the state-of-the-art National Science Learning Centre (NSLC) in York.

The project aims to improve teachers' scientific knowledge and teaching skills, so that by stimulating a greater interest in science more pupils will pursue careers in this area.

Some \$40 million of funding has been committed in the five-year partnership. Both the Wellcome Trust, a charity that funds biomedical research, and the UK government have provided \$15 million, while a group of organizations, including Vodafone Group and Vodafone Group Foundation, Rolls-Royce, Glaxo SmithKline, BAE Systems, General Electric Foundation, AstraZeneca and the AstraZeneca Science Teaching Trust, plus BP have each given \$1.5 million. "Between us, we're trying to put the wonder of contemporary science and hands-on experiments back into the heart of science lessons in every school in Britain," explains Ian Duffy, manager of BP's UK schools education programme.

Project Enthuse is part of a wider UK programme to encourage more youngsters to study the so-called STEM subjects of science, technology, engineering and mathematics. Britain is among many developed countries, including Germany and Japan, that have seen declining numbers of students gaining qualifications or seeking careers in these fields.

The trouble is with an increasing number of global problems, the world needs scientists now more than ever. "If you take the issue of sustainability alone," says Sir William Castell, chairman of the Wellcome Trust and a non-executive director of BP, "you have to hope we develop enough skilled scientists to come up with answers to some very serious problems."

Peter Mather, BP head of country for the UK, is aware of the local challenge that a lack of scientists brings, as he explains: "Clearly, it threatens the competitiveness of our economy and has an impact on company recruitment. We're lucky because our size and reputation mean that we still attract very good people. However, the recruitment pool is smaller."

BP's support for Project Enthuse is not simply a matter of enlightened self-interest. "The fund's aim completely mirrors that of BP's UK education programme—encouraging the teaching and uptake of STEM subjects," comments Peter.

Teachers are the priority for improvements in science education—not least because their enthusiasm about a subject has a huge impact on pupils and what they study. However, keeping teachers abreast of changing developments in science can be difficult. Although schools receive a budget for the continuing professional development of teachers, it is often insufficient for subject-based training.

Enthuse awards provide the answer. They cover the cost of course fees, travel and accommodation, even the cost to the school of providing teaching cover, plus extra funds for teachers to implement their learning when back at school. In short, a four-day residential course with total costs of around \$3,500 per delegate, is free with an award.

The courses are rigorous and demanding. Many consist of two residential periods with teachers returning to report on the changes they have implemented. "In the academic year 2007–2008, some 90% of teachers had a



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high impact in their schools," remarks Miranda Stephenson, director of the NSLC training programme. "We are seeing changes taking place."

Curiously, young people do not always see the connection between what they learn in the classroom and the application of science in the 'real' world. "Part of the problem is that their experience in school isn't sufficiently engaging," explains John Holman, director of the NSLC and one of the UK's most widely respected science educators.

To rectify that, Project Enthuse also provides opportunities for full-time scientists to spend some time working with teachers. These specialists can bring a whole range of benefits to schools: fresh ideas, better experimental work, plus an improved link between theory and application. Arguably even more importantly, they can act as role models and widen pupils' horizons.

"We want to enthuse youngsters about science by making teaching more inspiring, setting science in context and making practical laboratory work irresistibly exciting," explains Miranda. "When pupils leave school loving science and wanting to take it further, we will have achieved our goal."

SOLAR DONATION

The power to make a difference

By donating solar modules to the Wildlife Conservation Network, BP is making a valuable contribution to projects working to save endangered species, as Allison Conte reports

A YOUNG man in Kenya picks up his mobile phone and warns the authorities that a group of lions, which his team is tracking via electronic collars and the global positioning system (GPS), is headed toward a nearby village. With that phone call, the lions are saved from being killed by farmers trying to protect their livestock.

In scenarios like this all over Africa, endangered species are getting new hope of survival, thanks to BP and the Wildlife Conservation Network (WCN). BP Solar photovoltaic panels are lighting the way for scientists to protect vulnerable species and conduct research in remote locations, where they previously had little or no access to reliable electricity.

In his work as a volunteer, Stephen Gold runs the WCN's solar donation project. He combines solar modules donated by BP Solar with equipment provided by Solar Depot and other companies to piece together solar installations and ship them to research camps in Kenya, Ethiopia, Botswana and Zimbabwe. "This work is incredibly gratifying," he says. "We are contributing to the survival of some critically endangered species, with the hope that children can know that a cheetah is a real, living animal, not a fantasy like a unicorn."

Since 2004, BP Solar has donated 120,000 watts of solar panels (worth around \$600,000) to 150 causes, such as the WCN. "It's an easy way to make a difference," says Jay Miller, photovoltaic performance analyst, who explains how the donated panels come from BP Solar's rigorous quality-testing laboratory, where they have been subjected to accelerated weathering tests.

"The donated modules can't be sold because they don't meet our quality criteria, principally for cosmetic reasons," he says. "But they still have value. Rather than scrapping them, we put them to good use."

Good use indeed: solar energy enhances connectivity, productivity and impact at remote research camps. Freed from kerosene lamps and generators, researchers are now able to record data onto laptop computers in the field, keep biological samples frozen, track the whereabouts of endangered animals, as well as stay in touch with family and friends.

Save the Elephants in Samburu, Kenya, uses solar energy to power electronic equipment that tracks elephant movements. "Having access to clean, reliable solar energy has made a huge difference in the bush," says researcher Iain Douglas Hamilton.

Cheetah Botswana's new camp in the Western Kalahari is powered by BP Solar panels. "It's gratifying to turn on the lights and know that the electricity is sustainably produced," says researcher Rebecca Klein. "Now, we can really call ourselves conservationists."



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The Ethiopian Wolf Conservation Programme's research is headquartered in huts in the Bale mountains. In addition to supporting research activities, solar power enables the programme to assist film crews, which helps to raise awareness. "Solar energy has revolutionized our work," says Graham Hemson.

ORCHESTRAL RECORDING

Trinity students hit the high notes

At first glance BP, a film crew, a student orchestra and a world-class conductor, have little in common, but as Lisa Davison reports, they've come together to commemorate BP's 100th anniversary. Photography by Richard Davies

On an icy November day in London, a group of talented music students gathered in the city's oldest concert hall for a very special event. Bundled up in thick sweaters and gloves, the woodwind musicians suffered particularly, with their instruments taking longer than usual to warm up.

But, as the room began to fill with the complicated melodies of Stravinsky's *The Rite of Spring*, the atmosphere changed. If you've never heard the piece, imagine each instrument in a full orchestra playing what appears to be entirely different pieces of music, which, when put together, create magic: loud, aggressive, sense-assaulting magic. "It's unpredictable music," says Katie Lawrence, Trinity College of Music Symphony Orchestra's principal bassoonist. "[In 1913] no one had heard anything like it."

Composed as a ballet, the music tells the story of a wild pagan ritual in which a young woman is sacrificed to the god of spring. Its fieriness reflects a world that was falling headlong towards the First World War. Russian-born Stravinsky premiered what is still considered one of the most challenging pieces of music to play in May 1913 at Théâtre des Champs-Élysées in Paris, with the ballet performed by the Ballet Russes. Riots broke out in the audience.

Back in 2008 London, everyone had forgotten the cold. The Trinity College of Music Symphony Orchestra was here to record *The Rite of Spring*, along with Elgar's *Enigma Variations*, for a BP film that was commissioned to celebrate the company's centenary. In production for the past three years, the film tells the story of BP's history, starting with the now legendary tale of how George Reynolds and his team first struck oil in May 1908. It is this moment that Stravinsky's piece illustrates musically.

Steven Croston, commissioning editor of BPTV, chose Elgar's piece, premiered in 1899, to reflect the Englishness of Reynolds. "I liked the idea of the juxtaposition between a typically Edwardian gentleman and this huge gush of oil," says Steven. "At the time Reynolds was exploring, people would have been nostalgic for Elgar and frightened by Stravinsky."

"This was the musical era in which Persian oil was discovered," adds Sean Farrell, head of performance at Trinity College of Music. "It's primal, earthy music. It's a great way of contextualizing the history of the time."

The idea to commission a student orchestra came during a meeting between Steven—whose career began in classical music—and BP's former head of education, Jennifer Barnes, who also sits on the Trinity board. "It was an ideal opportunity to give students the exposure to a professional recording session, while providing Trinity with funding to bring in Edward Gardner—one of Britain's pre-eminent conductors—to direct the orchestra," says Steven.

Edward himself has been impressed by the students' dedication and ability. "My role is to interpret a whole piece and galvanize the talent. These students have been working incredibly hard."

Communication between conductor and musicians is an unspoken language and the orchestra must be sensitive to the conductor's facial expressions and body language to interpret the music. "The conductor influences everything," says Tadasuke Iijima, principal violinist. "You get a feeling from them and you have to transfer that through the orchestra."

Talk to anyone involved and there's a real buzz about this partnership. "This is a thrill for the students," says Sean. "It is not common for them to do something on this scale, and to have a conductor of Edward's calibre is spectacular. It's great experience for them."



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“This has been a unique opportunity to support up-and-coming talent while securing new recordings which will feature prominently in centenary film,” says Steven.

The film will be premiered on 1 April and available for general viewing after that date.

MATHS TUTORING

Maths support adds up to more than just numbers

By volunteering to help local schoolchildren struggling with maths, BP employees from Naperville, US, found the students weren't the only ones to benefit, writes Paula Kolmar

Naperville, Illinois, a suburb 50km (30 miles) west of Chicago, is home to BP's technology complex and other BP sites. The city of 145,000 often appears on lists of the most desirable places to live in the US and possesses a top-rated education system.

But despite this, the community shares some difficulties that are common in modern society. For example, a number of students attending Naperville's Mill Street School are struggling with some basic mathematical concepts. Five years ago, Mill Street, which serves students from age five to 11 years, began looking for volunteer tutors to help students overcome their problems with maths and BP responded to the request.

Robin Hicks, health, safety, security and environment (HSSE) analyst for BP, co-ordinates a group of employee volunteers who spend time each week providing tutoring for Mill Street students. Since the programme began, more than 60 employees have participated in the 'Math Mates' programme, with 12 volunteers currently taking part.

“The tutors are matched up with students according to grade level, the students' needs and the teachers' wishes,” says Georgie Lukas, instruction co-ordinator at Mill Street School. “We assign each tutor to a student mainly in the first, third and fifth grades and maintain the relationship throughout the school year.”

Georgie notes that the one-on-one support encourages students to risk making mistakes that are essential to learning. They may be reluctant to do this in front of classmates, but feel more comfortable working with a tutor.

Math Mates has rewarded both tutors and students. “The children look forward to their tutoring sessions that take place outside the regular classroom environment,” says Sue Doenges, a fifth-grade teacher at Mill Street.

Meanwhile, Kerry Bathrick, tariff and regulatory affairs director for US pipelines and logistics, regards his time tutoring as a highlight of his week. “It's a perfect lunchtime activity,” he says. “It's rewarding to see a child who has struggled with multiplication or division become excited about maths after understanding the concepts.”

Kevin Dewan, business change analyst, notes that students are “reluctant at first to ask for help and fear they are being punished.” In time, these fears disappear and progress follows. He recalls a student whose skills were at a first-grade level, but who caught up to his third-grade classmates within a year.

The BP tutors have varied backgrounds: Kevin has teaching experience and comes from a family of teachers; Kerry has volunteered for several community organizations; while hydroprocessing engineer Kim Fortelka tutored University of Notre Dame football players for four years. All, however, share the rewards of seeing children overcoming their fears and frustrations.

Kim describes the progress of students who begin counting on their fingers but eventually master “a different way of thinking about numbers” and can “break down maths problems to solve them with confidence.”

The rewards go beyond acquiring maths skills. “The success of learning maths builds overall confidence that carries over to the classroom and helps with other subjects,” says third-grade teacher Terry Kinn.

Ann Widlacki, a fifth-grade teacher, values the programme for its ability to “fill in gaps”, but sees tutors like Kerry as also meeting other needs. “He was more than just a maths teacher for one fifth-grade boy from Mexico who was badly in need of a positive male role model, and found that in Kerry,” she says.



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Robin notes another benefit: the tutors who donated time have qualified for the BP matched giving programme. “Last year, Mill Street received \$2,000 from BP to spend on teaching materials,” she says.

Naperville-area staff interested in Math Mates tutoring may email robin.hicks@bp.com or communityvolunteers@bp.com

BP ENERGIZES INDIAN SCHOOLS

A programme that began in 2007 in Mumbai, India, for English-speaking 11–13-year-old students focuses on teaching facts about energy, using materials such as rocks and fossils provided by BP, with support from company employees. The objectives of the Schools Link programme are to enhance the education of young people in communities where BP operates, provide opportunities for community involvement for its employees, and increase local understanding of BP.

Since the programme began in Mumbai, BP volunteers have donated around 100 hours of instruction. In return, the volunteers have enjoyed the satisfaction of sharing their knowledge with a new generation.

The students’ enthusiasm is an additional reward. “I am neither a trained teacher nor an energy expert,” says Baskaran Jayaraman, global market space manager for BP India. “However, I was able to engage and excite children about energy with the help of teaching aids from BP educational services.”

Another company volunteer describes the classroom experience as mutually enjoyable for him and the students. “I was particularly satisfied whenever I was able to link the topics with real-life issues,” says Sabyasachi Gooptu, performance manager, Castrol India.

“BP has given me the opportunity to practise my passion for teaching without having to take a break from work.”

The BP Schools Link programme has been running successfully in the UK for the past 40 years, operating in more than 200 schools and involving around 700 BP people. Mumbai’s participants exchange ideas with the UK as the programme in India looks to expand.

Visit ukschoolslink.bpweb.bp.com

MARATHON MAN FULFILS LIFE’S DREAM

He’s raised thousands of dollars for charity by running the world, but BP’s Miles Cudmore isn’t about to slow down

Running alone under clear skies across the ice sheet in Antarctica on his birthday, 13 December, Miles Cudmore could see for miles and miles. That made his progress seem slow—as if he wasn’t moving. Perhaps this contributed to his faster pace; he finished the marathon he was running in first place, breaking the course record time by six minutes, in four hours and 36 minutes.

“The camp was visible from three km [1.8 miles] away and it seemed to take forever to reach it,” recalls the technical director for BP’s North Africa strategic performance unit. “And then, suddenly, I was breaking the tape!”

It was the perfect finish to Miles’s quest to finish the Marathon Grand Slam—running a marathon on every continent, plus the North Pole.

The day after the race, the weather closed in, with a significant snowstorm bringing high winds and low visibility—dashing everyone’s plans to be home for Christmas. Miles and the other runners were snowed in for nine days. “We were completely at the mercy of the elements,” he recalls. “It was humbling.”

Running at the North Pole in April 2007 was another adventure. “The camp ran out of fresh water,” Miles says. “We’d been warned about that and had taken our own water, but we still ran out. So, we had to use defrosted seawater, making for very salty tea and coffee.”



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The Antarctica win was particularly meaningful for Miles, who dedicated the race to his late father, who died last October of leukaemia. Including BP's matching funds, Miles's race raised more than \$20,000 for leukaemia research. With his life's dream complete, what's next? "My new goal is to break three hours in a marathon," he says with a smile. "I aim to do that in Paris in April. Then, the next big one is the Ironman in Australia in December."

TALLOW CHANDLERS

Young technologists honoured

In recognition of their outstanding achievements, eight BP apprentices and young technologists have been recognized at the 2008 Tallow Chandlers Awards

The annual presentation of medals to outstanding BP apprentices and young technologists took place at Tallow Chandlers Hall, London, on Wednesday 19 November 2008. Eight very special young employees from BP's global operations received an engraved medal of excellence, designed by Christopher Ironside and struck at the Royal Mint, along with a framed certificate recording their achievement.

The ceremony was led by current Tallow Chandler, Master Rupert Travis, and the awards were presented by the Lady Mayoress of London, Lin Luder.

Apprentice recipients in 2008 were: Daniel Emmerson and Rebecca Davis, both based in Hull, UK; Dinayame Mendes from Angola; and Kevin Dunn, based on the Magnus platform, UK. Technical apprenticeships were awarded to: Mary Bidy, Naperville, US; Thomas Andrew, Germany; Fleur Ritson-Walton, Belgium; and Joe Mellor, from Wytch Farm, UK.

Lin, Rupert and John Mogford, BP's chief operating officer of Refining, all made speeches commending the award winners on their outstanding achievements.

"This awards ceremony in 2008 is the 32nd year of presentations by the Tallow Chandlers to outstanding BP apprentices and young technologists. This matches almost precisely the time I have been employed by BP, and during this time I have observed many winners progress their BP careers while contributing significantly to the growth and performance of the company," John told the audience. "From what I saw and heard of their achievements to date, I would expect nothing less from this year's award recipients. The company and the recipients should be proud of the quality they have demonstrated."

Peter Lowsley, representing BP Hull, added: "Three of the apprentice winners, Danny, Becky and Dina, were nominated for their achievements on the Hull site and this again emphasizes the quality of training provided there, particularly the Quartz programme which Danny and Becky followed, and on which training for the Angolan business unit is based." Two of the young technologist award winners also spent considerable time on the Hull site prior to taking up their current positions.

"This is a very special day for these eight young people, who represent the future of BP," said Tony Delaine, also representing BP Hull and Hull College training provider to Becky, Danny and Dina.

"They have received their awards to commemorate outstanding efforts and achievements. Significantly, Becky and Dina have excelled in an area that at apprentice level remains dominated—in terms of numbers—by men, and Dina is the first African medal winner. All today's award recipients will remember the day and the unique surroundings in which their medals were presented."

WOMEN IN ENGINEERING

Moving on up

Annual conference helps BP's female engineers climb the corporate ladder and attracts new recruits

For women in business, opportunities to connect with and learn from other women are crucial to developing leadership capacity, according to a 2008 McKinsey & Co report. Women with strong networks and mentors are more successful—enjoying more promotions and higher pay—and more satisfied with their careers, the report found.

This bodes well for the 80 women who attended BP's annual Women Engineers Professional Development



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Conference, held in Baltimore, US, last November. BP's US Refining group sponsored the event in partnership with the Society of Women Engineers (SWE), an international not-for-profit education and service organization with a mission to establish engineering as a highly desirable career for women.

The event attracted women from BP Solar, all five US refineries, refining technology, aromatics & acetyls, the Gulf of Mexico, North America gas and pipelines. They attended sessions on business skills, such as financial reporting, and 'softer' skills, such as networking, work-life balance, communication and conflict management. A panel discussion with top-level women leaders on how to advance into senior management was particularly popular.

At the conference, Deborah Grubbe, vice president of safety change management for US Refining, said: "Activities like this support women to develop leadership skills earlier in their careers, so they're better prepared for the next role. I hope this will help BP to fill leadership positions with talented women."

The conference was well received by participants. "The most valuable thing was interacting with other women in this field and talking with senior women leaders in BP," says Sarah Chester, project engineer at BP's Whiting refinery, adding that the communication skills she learned are already proving fruitful at work. "I am more proactive and make more explicit requests."

The conference was also an opportunity for BP to recruit new hires. The company sponsored the conference's 'innovation in business and technology track', displayed a booth at the career fair and hosted a tour of the BP Solar plant in Frederick, Maryland.

The efforts paid off with the career fair representatives talking to 275 potential recruits, conducting 10 interviews and recommending seven candidates for site visits or internships. "Through this type of exposure, we have an opportunity to position BP as the employer of choice in energy," says Deborah.

GET INVOLVED:

To get involved in the BP-SWE network, visit the sharepoint site at: <https://wss2.bp.com/RM/refining/RT/SWE> or join the email list by contacting Cori Steed at cori.steed@bp.com

Visit <http://societyofwomenengineers.swe.org/>

The 2009 BP Women Engineers Professional Development Conference will take place in Long Beach, California, in the week commencing 12 October.

NEWS IN BRIEF

Student commendation

UK

BP's Sally Zhang has been honoured at the Chartered Institute of Management Accountants financial management awards, which pay tribute to the leading performers in the industry. Sally, an analyst for BP Aberdeen, received the award for 'part qualified of the year' at a ceremony at London's Grosvenor House hotel on 27 November 2008.

The award acknowledges tomorrow's business leaders; those who have achieved excellent results and demonstrated sound financial skills, planning and management in a project or programme. In particular, Sally showed an ability to perform tasks that would normally be allocated to qualified students.

Education award

UK

BP's Hull site has been granted the National Education Business Partnership Network award for business volunteering. Presented at a gala dinner in London on 1 December 2008, the award recognizes BP Hull's 40-year involvement in local education, in particular through BP's schools link programme. The voluntary programme aims to inspire young people in science, technology, engineering and business skills. As well as providing teaching support, employees also supervise site work experience placements, which enables them to give students a greater understanding of how science is applied in the workplace.



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Honorary fellowship

UK

David Toman, remediation management's general manager for regeneration and project manager of the proposed village at BP's Llandarcy site in Wales, has been awarded an honorary fellowship of Swansea University. The fellowship, which is bestowed on former students who have achieved greatness in their chosen field or persons of distinction connected with the region, will be presented to Toman at a ceremony at Brangwyn Hall in Swansea on 13 July 2009.

History in the making

US

Across BP's workplaces, BP America employees watched the dawn of a new government administration in the US as Barack Obama took the oath as the 44th president on 20 January 2009.

BP-sponsored events in Anchorage, Naperville and Houston encouraged employees to take part in US history as the first African-American president was sworn into office. The BP Houston Citizen Action Programme (CAP) council sponsored the Houston event as part of its goal to educate employees on issues of importance to their jobs, families, and communities and inform them of the possible impact of pending legislation.



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Business

BUSINESS OMS

The good guide to improving performance

As the Operating Management System heads for company-wide rollout in 2009, Horizon learns what it entails and talks to some of its success stories so far. Photography by Marc Morrison

While China celebrates the arrival of the year of the ox and the United Nations declares 2009 the international year of astronomy, for BP the 10th year of the new millennium will mark the full-scale rollout of the Operating Management System, better known by its acronym OMS.

OMS brings together many existing group standards, control processes, practices and guides, supplementing them in areas such as process safety, integrity, environmental management and health. The aim is to create high-quality and consistent practices for design, construction, operation and maintenance throughout the lifecycle of any site—be it a refinery, an offshore platform or even a trading floor, which, while not an operating site in the traditional sense, still needs to meet certain business and regulatory expectations.

“It is an holistic management system,” says Gareth James, group head of technical management systems, “with a structured set of processes that are designed to keep our operations safe, responsible and reliable. It is about continuously reducing risk, improving performance and delivering business goals.”

There are three key elements to OMS: local business processes—or how a site does things; the elements of operating—eight essential themes that tell you what ‘good’ looks like in BP; and the performance improvement cycle—the engine that drives the system, or how you ‘do’ OMS.

Each part feeds the others. The elements of operating are the things you would expect to see in a successful operating environment, therefore enabling you to self-assess your site against them to identify any gaps. The performance improvement cycle helps you prioritize the gaps and systematically address them by making sustainable improvements to your local business processes.

“OMS provides some very clear boundaries that the sites can work within, while providing the freedom to be as creative as they want in that delivery,” says John Sieg, group head of operations. “The thing that does not change is what ‘good’ looks like.”

By taking that element of debate out of the process, sites are free to ask themselves ‘how do we become really good in a quicker, better, more cost-effective way?’ “We want to shift people’s thinking from reactively complying to being driven by the view ‘I am going to make this the best that I can and every day is going to be better than the last’,” says Sieg.

BP’s OMS journey really began in 2005, with the recognition that there were significant gaps in the way its operations were being managed. The system’s existence is in part a direct result of the Texas City disaster and the subsequent Baker Panel report, but, says Sieg, it was also borne out of the realization that “across BP, there was no consensus about what ‘good’ looked like. Without that, we could never achieve our aspiration to become a great operating company.”

What BP needed was continuity, and OMS sets out to provide just that. It does not tell sites how to achieve the best operating standards, but instead provides an expectation of what they look like so that those sites can identify their own gaps and work creatively to fill them. “We have an obligation to the communities in which we work, and to our staff, to provide peace of mind that the way we go about delivering our business is safe, responsible and reliable,” says Sieg. The intention is that OMS will ensure every BP entity will share a sense of commonality about what safe, reliable and responsible looks like.

But it is not enough to simply create that system, you need the people using it to understand, engage with and advocate the process. As Sieg says: “The first 20% of the journey is clarifying what ‘good’ looks like. The other 80% is about creating strong leadership and embedding a culture of continuous improvement.” To address this,



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OMS is supported by a set of educational programmes aimed at different levels, such as the Operations Academy and Operating Essentials.

This idea of championing the system is beginning to shine through, with segments sharing their experiences on a level James has not witnessed in BP before. "Exploration & Production [E&P] had a conference in September for about 350 operating leaders. They discussed OMS and shared experiences with those who had already begun the transition. It is one thing to hear this from someone at group level, but when you hear it from someone who you know is doing the same kind of job as you, then it becomes real."

Speaking at the conference, E&P chief executive Andy Inglis reiterated the importance of advocacy. "We need buy-in from the entire community—from top to bottom, and especially engagement of the front line. OMS will truly differentiate BP from the industry. My job is to support our businesses on this journey. Not the other way around."

Early debate also focused on whether operational sites with a good record could find value in this new system. "It's important to recognize that there are already good operations in BP," says Sieg. "The challenge was that we had too wide a range. Those good sites that have transitioned have had an easier time shifting to OMS and invariably talk about how it has helped them become much better than they were. This gives us confidence that OMS applies across operating."

One of the key ingredients when designing OMS was simplification. The core implementation team members all came from operational backgrounds and they were determined to create a long-lasting, effective system. BP already had a number of the pieces in place—Getting HSE Right, the Six Point Plan, along with the Integrity Management and Control of Work standards. "All of these things are very important," says James, "but they are complicated, duplicative and incomplete. We needed a simplified, holistic approach to managing our risks. The way I look at it is that OMS creates a foundation upon which we build our house—the great operating company."

BP began building those foundations last year with the first wave of sites transferring to OMS (see case studies). During that period, each site worked closely with the core OMS strategy team to provide feedback for improvement, consequently helping to produce a second, improved version of OMS.

The plan is for all BP sites to have transferred to OMS by 2010, although the transition in itself is not the end of the road. The expectation is that each site will repeat the process of identifying, prioritizing and filling gaps on an annual basis to achieve continuous improvement. "Transitioning to OMS is like being told you've been accepted for university or engineering school—that's only the first step. Then you have to learn and practise to become a great engineer," says James.

For more information on OMS, visit <http://safetyandoperations.bpweb.bp.com/oms/>

REFINING CASE STUDY

Lingen: no going back

For Lingen refinery, embarking on OMS provides an opportunity to build on firm foundations, writes Helen Campbell. The site's OMS implementation manager, Geir Østvold, says the initiative has received good support from the leadership since its inception, and that the decision to advance transition from the third quarter 2009 to December 2008 was largely because of this backing. Despite initial scepticism, there is now a strong feeling that Lingen's workforce is fully behind it. "In the beginning, we did hear a bit of negativity—'just another initiative'," Østvold says. "But I think people then saw it was bigger than what we had before and have taken ownership of the system."

The site completed its first gap assessment in July 2008, with the leadership team opting to devise the plant's local OMS (LOMS) handbook in parallel. Initial assessment identified just 13 areas, out of the 244 'group essentials', as needing improvement to align Lingen, and the plant is now working towards closing what were very narrow gaps. "The assessment showed areas where we needed to work more systematically, including management of change, accountabilities, process safety training and education initiatives," Østvold says. "At the same time, it reinforced the things we do well and could build on, including our action tracking system, our approaches to organizational learning, performance in crisis management and emergency response, and the



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way we handle permits to work.”

Østvold sees no conflict in merging the new system with what existed, and says that although the site’s OMS activities to date have demonstrated the high standards at Lingen, there is always room for improvement. “We already had a good management system—I believe one of the best in Refining—and what we have now will further improve performance and safety. OMS drives a more systematic way of operating and reduces your risks, and you never want to go back to what you did before if you have made an improvement.”

E&P CASE STUDY

San Juan: making tomorrow better than today

It’s too early to declare victory, says the San Juan performance unit (SJPU) leadership, despite successful OMS implementation. Instead, writes Joe Strebel, it has taken the first, albeit important, steps on a continuing journey, which began in late 2006 with agreement across the North America gas strategic performance unit (SPU) to implement a standard approach to OMS based on several principles: to reduce risks and improve operational performance in a systematic manner; be incorporated into planning at local site level; be a long-term, sustainable effort; be inclusive of all SPU activities, and progress them simultaneously rather than employ pilot site implementation. “In 2007, we began using OMS to work with local sites to understand what a good operation should look like,” says Jeff Braun, performance unit leader. “We then supported our two local sites in Colorado and New Mexico in self-assessing where they stood in relation to that ideal. OMS provided the framework to draw up annual operating plans, identifying opportunities and risks in an holistic way.”

“We’ve always worked to improve operations,” adds Al Vickers, SJPU operations manager. “But OMS gave us a disciplined approach that helped direct finite resources to areas that represented the greatest risks and opportunities as viewed by the local teams working hand-in-hand with some healthy challenge.” The results are impressive. For example, OMS provided a systematic way of managing losses from its 3,500 gas wells, cutting decline from 15% in 2006 to 2% in 2008, without infill drilling activity. Similarly, gap assessments revealed needs to improve reliability and capability, and to reduce mechanical integrity risk at the Florida River gas plant. “Management approved investments in both equipment and people because they were clearly justified by data,” says Vickers.

Endorsement of OMS’s value is also present at local operating sites. “We used OMS to demonstrate that selective staff additions and employee development were essential to an expansion project,” says Dave McKenna, San Juan, Colorado, operation centre manager. “In the past, we were not able to address these issues, but incorporating them into the annual plan resulted in solid progress in 2008.”

Improvements are expected to continue as OMS becomes ingrained across the SPU. “Because we’re on a shared journey and use a common language, we can learn which practices might work better for others and share across the business,” says Vickers. Although the move to OMS came in December, the process is far from complete. “We are at the beginning of utilizing OMS to achieve continuous improvement,” says Braun. “The true test will come in five years when BP’s front line personnel say they use it to run their business, to make tomorrow better than today, and establish a track record of safe, reliable and efficient operations. That’s the magic that tells us we’ve done something special.”

AROMATICS & ACETYLS CASE STUDY

Cooper River: leading the OMS pack

Selected as part of the initial group of sites to begin implementing OMS, BP’s Cooper River plant became the first facility to complete the transition in October 2008, writes Paula Kolmar. Located in South Carolina, US, the plant is a major producer of purified terephthalic acid (PTA), the raw material used in the manufacture of polyester and plastic bottles.

Terminology that describes the first phase of OMS implementation—“transition from Getting HSSE Right (gHSSEr) to OMS”—is rather mild considering the daunting task Cooper River was given back in 2007. According to Brent Pace, environmental engineer and OMS lead for Cooper River, it has been challenging to be in the first group to figure out an efficient and effective method for writing procedures for OMS. “The most demanding aspect of OMS was where and how to begin writing the procedures. Since no site had yet implemented it, the only option was to look at the framework and start writing,” says Pace. It was his job to “essentially describe how Cooper River does business within a localized set of OMS procedures and cross-



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reference the OMS framework to ensure the site was meeting all obligations.”

Mark Berlinger, the site's previous HSSE manager, also played an integral part in the development of the OMS procedures and the local operating management system, or LOMS.

Cooper River's journey towards systematic operations—the foundation of OMS—really began five years ago, says plant manager Mark Fitts. “By the time OMS was rolled out as the framework for operations management, we were deeply embedded in a systematic operations approach,” he says. “But we viewed OMS as a framework that Cooper River would use to solidify our systematic operations in a way that would be consistent across BP. Just as importantly, OMS gave us a method of ensuring continuous improvement because it includes the performance improvement cycle [PIC].”

Pace echoes that point of view: “OMS drives systematic operations and Cooper River was well on the way towards achieving this goal—which meant that the underlying way of doing business did not fundamentally change with OMS implementation. OMS had, and will continue to have, a major impact at Cooper River. As each PIC is completed, we strive towards continuous improvement.”

Now, a formalized structure is in place for annually performing a gap assessment against a rigid set of standards: maintaining risk registers to help set priorities for each coming year; monitoring and measuring the performance targets to ensure continuous improvement; and carrying out a formal review to begin the cycle again.

Cooper River's next phase is to improve the link from OMS to front line operations. “Our goal is to use OMS as a way to first describe what a great operator looks like in BP, and then link OMS to the fundamental manufacturing skills needed by any manufacturing technician,” says Fitts. “This will mean aligning the requirements of OMS to the specific site procedures that support systematic operations. After that step, we can systematically and consistently train and support our staff.

“Theoretically, a Cooper River technician would be able to go into any BP refinery and work seamlessly after unit-specific training for whatever job they do.” It sounds like an obvious idea but OMS is a necessary format to make it possible.

As BP's leadership model, forward agenda steps and OMS begin to meld in places like Cooper River, the big picture is becoming clearer. Getting every employee and contractor onboard, however, is the biggest challenge. It's happening at Cooper River and, according to Fitts, “the silver bullet is people, leadership, communication and a genuine desire among the people to improve at every turn.”

The OMS framework is a strong tool and Pace believes it has a lot to do with the team's pride in its work. “Everyone is very proud to be the first site to convert to OMS, but I think underlying that is that we are proud of the implementation of systematic operations which is the basis for OMS,” he says. “The employees at Cooper River are innovative and always looking for ways of improving our systems and operating safely from a personal and a process standpoint.”

TEXAS CITY REFINERY

Team spirit wins out

As Texas City refinery returns to full capacity, the team behind Pipestill3A celebrates its success at this year's Helios Awards. Paula Kolmar reports

As the US enters a new age, with a remembrance of an era when the human spirit carried the country forward in the worst times, it's natural to look for mirrors of bygone determination and solidarity among one's own circle of friends and colleagues. As it enters its 75th year, Texas City refinery offers a clear reflection of what the phrase ‘human energy’ means in action, following its Pipestill 3A (PS3A) team's win at the 2008 Helios Awards.

In essence, the human energy award is about the personal side of bringing the forward agenda to life in the workplace, about consistently delivering benefits and results, and about what separates BP from others in the industry. Out of more than 1,300 entries from around the world, it was a team from Texas City Refinery that met the very high standards needed to win this honour. The journey to the ceremony in London last December really began early in 2005 with the fatal explosion at the refinery, shortly followed by Hurricane Rita's onslaught



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of damage and destruction.

Human energy and sheer willpower from employees and contractors are the foundations that brought the PS3A team to the Helios Awards podium. "On behalf of the leadership team, and all of us at the refinery, I congratulate the PS3A team for your efforts in making this recognition possible," said Texas City Refinery manager Keith Casey, also at the event, upon the team's acceptance.

With its return to operations following start-up in April 2006 and the consequent silent running and consistent operations of critical feedstock, unit PS3A helped provide 99.7% unit availability throughout 2007. In moving BP forward, the refinery exemplified sustained operational excellence, strong internal support and communication, and deep ties with the city of Texas City.

This is not a journey for the fainthearted, nor is it one with a defined end. The cultural shift to believe in becoming the best is a result of effort from thousands of BP employees, effort that must be constantly nurtured. Casey notes with pride how employees and contractors worked more than 18 million man hours on the refinery recovery project: "This includes more than 2,000 BP employees striving to safely build a manufacturing complex." He refers to the people at the refinery who rose to the task as 'volunteers', as they have worked straight shifts and some even postponed retirement to help safely restore the giant refinery, one of the largest in the world, to safe and reliable operations.

According to Casey, BP leadership said that the award for PS3A really exemplifies the journey and commitment of all of the people of BP Texas City. "We all own a piece of this and I could not be more proud," he says. "Texas City was a huge winner."

A winner, indeed: in 2009, the refinery will celebrate 75 years as a major force in providing employment and revenue for Texas City, for helping secure a top position in the US as a major energy provider, and as an example of meaningful corporate citizenship. These accomplishments, along with continuing growth towards operational excellence and the PS3A team earning BP's highest award, did not go unnoticed by the mayor of Texas City, Matthew Doyle. In a formal proclamation, Mayor Doyle put on the record a very long list of the refinery's contributions and achievements since its construction began in the deep depression year of 1933.

He concluded by stating, "I am proud to honour BP Texas City Refinery and its thousands of employees and retirees. This 75th anniversary year is an opportunity to celebrate how far the refinery and the city of Texas City have grown together and how much the refinery has contributed to our economic growth and quality of life."

Human energy at Texas City, supported by leaders like Keith Casey, is representative of BP's most powerful resource: people.

AZERBAIJAN PROJECT SUCCESS

Scale of the century

If ever a project deserved its 'mega' status, it is the award-winning \$10 billion Azeri-Chirag-Gunashli complex in Azerbaijan. Helen Campbell reports

The azerbaijan strategic performance unit (AzSPU) recently had cause for celebration, when the Azeri-Chirag-Gunashli (ACG) project clinched the coveted winner's trophy in the 'performance' category at the 2008 Helios Awards finals. The accolade recognizes the team's success in bringing the mammoth project onstream, on budget and on schedule, while overcoming huge logistical challenges.

Deepwater Gunashli, the third phase of the original 'contract of the century' to develop the 5 billion barrel ACG field, came onstream in April 2008, bringing additional international credibility to BP as operator of Azerbaijan's first offshore production sharing agreement and, to the country itself, billions of dollars in oil revenues, new-found confidence and a legacy of vastly improved infrastructure and local capability.

In these days of deepwater, and 'ultra-deepwater', and sophisticated drilling techniques, there is no shortage of technological feats in the oil and gas sector. But it is not technology or water depths that make ACG stand out. It is location, scope and sheer size.

Lying 130km (80 miles) east of Azerbaijan's capital Baku, ACG consists of six huge platforms and the Caspian's first, and only, subsea development. The work scope included the engineering, fabrication,



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construction, installation and commissioning of offshore drilling and production, gas compression and water injection facilities, and subsea oil and gas pipelines, along with the expansion of what is now the largest onshore terminal outside the Middle East. BP also undertook its largest-ever saturation dive programme. The project required an unusually large workforce of locals, BP expatriates and contractors.

“Looking back, what surprises and impresses me most of all about the project is its scope and scale,” says Bruce Luberski, vice president of major projects, BP Azerbaijan. “Making sure everyone crosses the finishing line at the right time is usually the problem that big projects have, and the whole thing had so many pieces. We had some excellent people who worked tremendously well together to keep things aligned, and all the pieces came together in the right order.”

Geography and logistics played huge roles in those project management challenges, and the unfamiliar Caspian was not a place to test new technology. Although Azerbaijan had been the Soviet centre of platform jacket construction, its yards did not have the experience of building anything on this scale. Neither did the Caspian possess the heavylift, installation and pipelay vessels required to perform installation of the necessary offshore modules.

In fact, the team had to bring in ready-made drilling and accommodation platform modules from Europe via the Volga River and Russia’s extensive canal system. In addition, the teams undertook major upgrades of suitable local state-owned vessels to provide the necessary installation capability. Together with a number of other offshore support vessels—partly dismantled before being brought through the narrow canal system and then reassembled—the team performed the Caspian’s first-ever ‘floatover’ operation, involving floating and ballasting the platform deck between the legs, before installation. Although the technique was not new, other projects have involved 12,000 tonne decks, whereas this was almost 16,000 tonnes and had to be performed six times.

But the project’s size actually worked in its favour, with the delivery team adopting a standardized ‘production line’ framework, keeping designs and workforce unchanged. This approach resulted in build cost savings of up to 24%, construction schedule improvements of more than six months, and a 34% improvement in hook-up and commissioning time. Cloning in this way also meant resource demands fell from 31 to 11 direct man-hours per tonne, while build time was reduced by more than seven months.

“We wanted predictability, so we had a policy of ‘no change’ and established a culture to hold true to the standardized concept,” says Carroll Kearney, AzSPU’s major projects construction director. “After every installation or hook-up, we held lessons learned workshops and built an extensive knowledge management base. In some ways, bigger was better, as we had a chance to learn each time and apply that to the next. By maintaining the ‘no change’ philosophy, we were able to bring the first oil date forward by three months.”

The huge and diverse workforce meant it made sense for BP to manage the entire process, and the company became far more involved in areas it normally leaves to third parties. “It was an unusual situation as, usually, marine contractors turn up with their vessels, but in this case all the vessels were owned by [state oil company] Socar, so the international marine contractors just sent their people,” says Frank Wilson, who served as transportation and installation manager, and is now marine subsea director. “In effect, we contracted the vessels from Socar and acted as middleman with the Western contractors.”

Internally, the ACG team’s experiences have had significant influence on the formation of BP’s major projects common process, defining the way the company approaches its largest ventures. Externally, ACG’s success has earned a clutch of industry awards and recognition from international peers.

In Azerbaijan, aside from the oil revenues, ACG has created and sustained, over six years, jobs for 15,000 Azerbaijani nationals, training them to international standards. Many now hold senior positions in AzSPU, while others are able to seek jobs in the wider sector.

The intent of the ‘contract of the century’ was to develop the country as well as the oil. The fact that the next platform—planned to develop the Chirag Oil Project and come onstream in 2013—will be built in-country, and mostly by nationals, is the strongest proof of this lasting legacy of local capability.



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SOLAR INSTALLATION

Retail giant takes step closer to green goals

The completion of a project to install BP Solar panels on Wal-Mart rooftops is a mark of successful co-operation

BP has completed a 4.1 megawatt (MW) solar installation project for Wal-Mart, bringing the world's largest retailer one step closer to its goal of using 100% renewable energy for its US stores. Completion of the project marks the successful co-operation between BP strategic accounts and BP Solar, which in turn helped Wal-Mart work towards its goal.

"This is a remarkable milestone," says Mark Kerstens, former BP strategic accounts vice president for Wal-Mart, and now vice president of sales and marketing, BP Solar. "Our journey started with a phone call to Wal-Mart executives in May 2006. A year later, the combined expertise and manpower of strategic accounts and BP Solar helped us win the contract for seven stores. Eighteen months after that, all seven sites are up and producing clean, green energy. These stores are examples of how businesses that choose renewable energy reduce their energy costs and can make a difference."

The programme included solar systems on Wal-Mart and Sam's Club sites in California, with final installations at the Sam's Club in La Habra (493 kilowatts), as well as systems at Wal-Mart Super Centers in Palm Springs (605 kilowatts) and Beaumont (675 kilowatts).

"BP was one of three companies awarded the project in May 2007 and we are very excited about completing construction on all seven of the stores in our portion of the portfolio," says Dan Dunham, commercial operations manager, BP Solar, California. "One of our keys to success is a power purchase agreement (PPA). Under this financing option, Wal-Mart will purchase all of the energy produced by our solar power systems and BP Solar will operate and maintain the systems. This is an efficient model that enables Wal-Mart to focus on its business and reduce its costs while improving its environmental footprint."

The 4.1MW project is expected to produce 6.7 million kilowatt-hours of electricity every year, which is estimated to eliminate 4,800 tonnes of carbon dioxide a year—the equivalent of removing 877 automobiles from the road.

In addition to enhancing its PPA and project development capabilities, BP has used the pilot phase to test and refine its commercial delivery of engineering, procurement and construction (EPC) capabilities. The team's success is largely thanks to the development of a clear project structure that ensured excellence in project management and utilized each player's skills and strengths.

Darryk Ataide, project delivery manager, BP Solar, ran the day-to-day execution of the implementation programme: "Working with various engineering and construction contractors as well as several different delivery models—while utilizing BP's integrated approach to project selection, development and execution, and capital value process throughout—we perfected the EPC process to deliver best-in-class results, always with safety firmly at the forefront of our thinking."

Felix Taubman, BP Solar's commercial sales director, sums it up: "BP's seven-site PPA project with Wal-Mart is exciting and groundbreaking. It is BP Solar's first fully self-developed and financially structured PPA in North America. Completion of the journey marks an important qualitative step in the BP Solar organization. We created a sophisticated and highly focused commercial project development and financing model. We learned how to screen and develop projects, how to produce bank-quality financial modelling, how to structure and operate a PPA, and how to engage all the parties needed to make this complex offer work. Wal-Mart will use the pilot to assess its next steps. In the meantime, I would like to say how proud I am to have worked with such an outstanding team."



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AIR BP

Safety hero stands tall

When protestors entered his fuelling site in Bolivia, Air BP's Percy Rojas answered the call of duty with a calm head and clear goal—keep everyone safe. Paula Kolmar reports

Percy Rojas, a site manager for Air BP, has an extraordinary perspective on delivering safety, following the occupation of his aviation fuelling site in Trinidad, Bolivia, by a group of protestors late last year. Ask Rojas if the company's safety policies, training, brochures and signage made a difference in the situation and he will convince you with an emphatic "Yes!"

Since joining BP in 2005 the native Bolivian has embraced safety as a priority. "I have participated in several courses that helped me change the way I think about safety and security and the way I look out for people. I strongly communicate what I learn within my family and fellow employees," he says.

Air BP site managers, like Rojas, have a duty to ensure that staff, contractors and visitors on the site are aware of the hazards, and understand their personal responsibility to act safely. Human safety comes first. So when the unwelcome and uninvited 'visitors' held Rojas and his Air BP site employees against their will in September 2008, he came face-to-face with a safety challenge that put his training, knowledge and leadership skills to the test of a lifetime. These were extraordinary circumstances that called for extraordinary measures of clear, calm thinking and immediate action. For Rojas it meant assessing risk, setting priorities and doing the right thing—protecting people from harm by keeping the facility intact, starting with his staff. "Once I became aware that there were outsiders controlling our site, I went to our office and talked to the site personnel, helping them to stay calm and focused," he explains.

As the events unfolded, "I thought about safety in terms of avoiding risks for me and for other people on my site. I took time to analyze those risks before acting. It was important not to alarm the protestors and critical to get them to fully understand that volatile substances would get everyone present injured."

"Keeping that in mind, I suggested to the protestors that my operator staff shut-down operations at the site, which we did safely."

That action alone wasn't enough to maintain safety for everyone in Rojas's sharp assessment. Over the course of seven days, his leadership skills came into play as he gave in-depth safety briefings to each protestor who entered the site. This continued by phone even after he and his staff were released and away from the site. Why? "I had a duty to make them aware of the risks for them at the site and how to stay safer by following rules set out in our safety programme. They had no knowledge of the seriousness of the situation." Rojas describes the safety induction: "The safety briefings included a clear explanation of the risks. My team further helped them understand the safe places to use cellular phones." As any good safety manager would expect, everyone complied completely.

The peaceful resolution of the protestors' negotiation with the outside world came about, in very large part, due to wise safety implementation on Rojas's watch. He cautions, however, that he could not have succeeded without management support and dedication to safety.

To say Rojas is understated is an understatement in itself. He sums up the experience with a simple remark: "I was trained to comply with and fulfil safety standards, and we have always been told people come first. I believe I fulfilled my duties during a very tense moment." He states quite plainly what means most to him though: "I felt good when I got home, because my two teenage daughters told me 'Well done Daddy! No -one got hurt.'"



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E&P TECHNOLOGY FLAGSHIP

To preserve and protect

Maintaining and improving BP's reliability and mechanical integrity is crucial to its future licence to operate. Derek Smith discovers how one technology flagship helps support that

Ensuring the reliability and long-term mechanical integrity of BP facilities is a fundamental part of protecting BP's privilege to operate. With billions of dollars of assets in operation in many different environments around the world, maintaining technical integrity is a constant challenge.

The Inherently Reliable Facilities (IRF) flagship technology programme is a part of BP's efforts to preserve, protect and improve integrity and reliability. It aims to deliver at least 1 billion barrels of non-proven additional reserves by extending facility life and enhancing BP's ability to handle aggressive fluids. By contributing capital and operating expenditure reductions, it also aims to create additional value.

The benefits are both immediate and long-term. IRF seeks to deliver tangible tactical advantage to the strategic performance units (SPUs), building on the successes of previous technology initiatives in Exploration and Production (E&P), but applying them on a larger scale. An example of this is the use of fibre optics as a step-change in pipeline monitoring, detecting ground movement, third-party interference and leaks. Following trials at Kinneil, UK, in 2008—during which a person could be detected walking over a buried fibre 100km (60 miles) away—there are now plans to deploy the technology on BP operations in Scotland, Azerbaijan and Canada.

One of the programme's technical themes is examining the interaction of engineering materials, such as steels and polymers, with the range of fluids encountered during oil and gas production operations. The aggressive nature of produced and injected fluids results in general and localized corrosion, and various cracking mechanisms, all of which need to be understood at different temperatures and pressures, and in different fluids. Research not only enables BP to understand and extend the safe and reliable working limits of existing materials, but also reveals the potential of new ones. For example, co-operation between IRF and Sumitomo produced a new grade of high-strength casing material for the Rhum field in the North Sea, which made high-integrity well designs possible. Such knowledge enables BP to compete more effectively when trying to access new reserves and to conduct existing operations more cost effectively.

Understanding, predicting and controlling the risks associated with corrosion are industry-wide challenges that are also key to IRF. Corrosion can have a major impact on the cost and schedule of both new and existing projects. As demonstrated in Alaska, this can also have a serious effect on company reputation. BP spends hundreds of millions of dollars annually on corrosion management and control, and the IRF programme aims to help focus and support that investment.

Bill Hedges, corrosion inspection and chemicals team leader in Alaska, highlights the critical importance of IRF to Alaska operations: "In a 30-year-old, mature asset with ageing facilities, we have an increasingly difficult challenge of finding and controlling corrosion. The exciting development of an Alaska gas pipeline ensures the asset will be producing for another 50 years, using much of the existing infrastructure. To manage corrosion successfully, it is essential we understand our corrosion mechanisms more fully and have cost-effective ways of control. Having successfully managed the aggressive corrosion due to carbon dioxide, we now need to better understand localized corrosion mechanisms, such as microbially induced corrosion, under-deposit corrosion and corrosion under insulation. These mechanisms can affect a single, isolated location on a pipeline and so we will need inspection methods that can interrogate the full length and circumference of a pipeline. They can also be rapid, so the technology must be capable of being used frequently. It is only through investment in new technology that these goals can be reached and the IRF programme represents BP's best opportunity to ensure we become a world leader in corrosion control."

IRF is also working to develop new techniques for monitoring, inspecting and assessing critical equipment, much of which, such as subsea infrastructure, is hard to gain access to. The aim is to improve the quality of the data and increase the use of remote access technologies. Developing common tools for interpreting data is also vital, as analysis underpins decisions that have major commercial, safety and operational implications—such as whether a given facility should continue to operate or be shut down. Non-destructive evaluation developments in Alaska, involving radiographic and guided-wave, long-range ultrasonic inspection technologies, proved to be a crucial aspect of continuing operations.



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Good integrity and reliability management requires identification of the threats and risks faced by a facility, and actions taken to mitigate them. Monitoring and inspection is then used to demonstrate how those mitigations have been successful.

The IRF programme's information management and visualization theme will ensure that managers and engineers have the correct data in the right format at the right time to make sound technical and commercial decisions, and that they make these decisions consistently well. This involves the development and application of digital technologies within the E&P 'Field of the Future' programme, in order to get 'data to desktop' for field operations staff, management, and company subject matter experts. BP's expertise in rotating equipment will be exploited through remote centres, where centrally located company experts will have access to monitoring data from machines operating around the world.

According to Simon Webster, vice president overseeing the IRF programme, the work being done reflects BP's efforts to improve the integrity and reliability of our facilities while learning and sharing information more effectively. "Our dedicated team of 20 engineers work very closely with engineers within the SPUs to ensure our programme is focused on real business issues. This set-up helps ensure that the team is working towards common goals, developing technologies to agreed time frames and budgets, within agreed plans."

Links have been established between IRF and the engineering networks of BP's technical experts engaged in materials, pipelines, civil structures and maintenance and reliability engineering. In Webster's view, these links help to create a clear focus on the deployment of technology, ensuring any proposed development brings to bear the required skills and formal relationships with the SPUs, preferred suppliers and specialist technology companies to allow rapid deployment at scale.

The IRF flagship programme occupies a fascinating position in the company's technology efforts; few areas have a critical role in the maintenance of existing operations while also being such an exciting part of their future.

IN THE FRAME

THUNDER HORSE

BP's Thunder Horse platform in the Gulf of Mexico is celebrating the start of production from its third and fourth wells. The platform is now producing some 200,000 barrels of oil equivalent per day and is on track to reach capacity of around 290,000 barrels of oil equivalent per day in 2009. It marks the completion of commissioning and commencement of full operation. First oil was achieved on 14 June 2008.

The Thunder Horse platform is located around 240km (150 miles) southeast of New Orleans, US, in the Mississippi Canyon, at a water depth of 1,850 metres (6,050 feet).

It is the largest drilling and production semi-submersible facility in the world at 130,000 tonnes displacement. It has a deck load capacity of 40,000 tonnes and a maximum of 298 people work on the platform.

Since 1995, total daily deepwater Gulf of Mexico oil production has increased from 151,000 barrels of oil per day (around 2.3% of US oil production) to 936,000 barrels per day (around 18% of US oil production). BP plans to start up additional production from the Thunder Horse North field in the first half of 2009.

EUROPEAN LOGISTICS

Silent heroes

Single-minded dedication to safety is the secret behind winning an award for silent running, as members of the triumphant European Logistics team tell Tim Wickham

Winning a safety award for silent running recognized the continuous effort made by the European Logistics team over the past three years to deliver consistent levels of safety and efficiency. That's no mean feat for an operation spanning 18 countries.

European Logistics is very much a behind-the-scenes team. "We always say that if no one hears about us, we are doing a good job," says Wolfgang Langhoff, vice president for European Logistics. In many ways, this has paid off, with the team able to quietly, consistently improve its safety performance to such an extent that today



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it is recognized as best-in-class in BP and the industry, with a higher than 99% delivery reliability rate to retail sites, keeping customers supplied even during crises, strikes and other disruptions.

It is this achievement that won the team the safety award at the end of 2008. "It was fantastic," says UK logistics manager Nigel Wardle. "To receive a silent running award for outstanding safety performance is as good as it gets. We work passionately day after day to keep delivering fuel safely and efficiently." Business development manager Jules Geerkens agrees: "The award is recognition of the work we do. Silent running is in the blood of everyone in European Logistics."

"We constantly try to accomplish our targets and raise our understanding of safety issues. There are many hurdles to overcome that are outside our control, especially weather conditions and disruptions, but we have to deliver business as usual," says Langhoff. "There is a sense of belonging and shared purpose in our team."

The team's success in safety actually goes back almost a decade, as operations across Europe learned from incidents, shared best practice and put in place continuous improvement processes.

Langhoff highlights three key cultural dimensions that underpin this winning attitude. Firstly, proximity to operations—the European Logistics leadership team is based in the field, engaging all the time with drivers and terminal operators to ensure a direct link with what is happening on a day-to-day basis. Secondly, the constant pursuit of operational excellence—the team's highly motivated employees are passionate about their work, while the leadership team listens to what they say can be done better. And thirdly, building on a passion for the business—as well as working hard, it is important to enjoy work. Activities like the driver of the year competition and regular events at terminals to celebrate injury-free working milestones are popular with employees.

Amsterdam-based Geerkens leads a team of 10 as part of the European Logistics central support team. "The central support team helps deliver silent running by sharing information and best practice methods," he says. To do this, the team facilitates a transport advisory group and storage and handling advisory board. "We co-ordinate, prepare and support implementing programmes like the integrity management standard and initiatives to continue on our journey to operational excellence."

Geerkens' team looks at ways of standardizing the implementation of important programmes. "It's much more effective than sending programmes to each country and letting them do their own thing in isolation—working together in the networks enables the standardized approach," he says.

European Logistics has networks of colleagues in each country who share best practice in health, safety and environmental areas. "Good examples include improving fuel efficiency and reducing driving risks by taking scheduling of the trips for the drivers into account," says Geerkens. "Our silent running is a result of all these activities."

Andreas Fuchs, storage operations manager, Germany, faces a broad challenge to meet the business's high expectations. "For us, it means we load and unload ships, lorries or trains, and run our pipeline operations without any accidents, harm to people or quality issues," he says.

Fuchs is responsible for four terminals in Germany. The large number of contractors working for BP are expected to meet the same high safety standards. "Having the right culture and the right attitude for everyone on site is essential," he adds.

Regular driver assessments are a key element to improve efficiency of operations. "In the UK, we gather data from telematics technology onboard every vehicle, which we analyze daily," says Wardle, who is responsible for 12 terminals and 500 drivers in one of European Logistics's largest country operations. "Our more experienced drivers act as coaches to their colleagues and talk to them about where improvements can be made."

Implementation of group safety standards in transport and storage and handling underpin Wardle's approach. Coping with road conditions, especially congestion, is a challenge. "Better driving techniques not only mean more efficient use of engines and fuel, but also ensure driving is less stressful," he says.

Only experienced drivers with many years under their belt are recruited by BP in the UK and they all then undergo an intensive three-month training before they take to the road.



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Disruptions and accidents cost BP time and effort to rectify, which has a direct impact on overall performance. Not surprisingly, thanks to its safety record, the economic and performance figures of European Logistics are equally impressive. “Our challenge is to maintain momentum and not be complacent about our achievements. Constant vigilance and attention to detail across all operations never stops,” says Langhoff.

ALASKA REPORT

Future looks bright for Alaskan endeavours

As it enters a new year, BP Alaska is continuing on an ambitious course of renewal that could rival everything it has achieved to date. Frank Baker reports

This year, as Alaskans observe their 50th anniversary of statehood, BP also has cause to celebrate. In 1959, the company sent its first field geologists to Arctic Alaska, and since then it has successfully developed more than a dozen oil fields in the state’s remote northern region, the North Slope, and produced billions of barrels of oil—more than any other asset in the company’s 100-year history.

During its five decades in Alaska, BP has become an industry leader in the advancement of oil field technology. At Prudhoe Bay—the crown jewel of BP’s oil fields across the world—it has produced billions of barrels more than most experts predicted.

During much of this time, oil taxes and royalties have continuously provided around 85% of Alaska’s revenues, and swelled the state’s savings account, or Permanent Fund, which, before the US economic downturn in 2008, had grown to more than \$35 billion. BP Alaska has been one of the state’s biggest private investors, and in communities across the state, the company has shared its success through a wide range of contributions and social investment programmes.

But people such as BP Exploration Alaska president John Mingé, his leadership team and other members of the Alaska workforce are not inclined to revel in the company’s past, however colourful. They prefer to look ahead to a bold and exciting future.

Long-term future: “Looking forward, our priorities are safe, reliable and efficient operations, managing the light oil decline, renewal of North Slope infrastructure and facilities and unlocking heavy oil and gas, which are immense resources,” says Mingé, who on 1 January 2009 took over the reins from Doug Suttles, who went on to become chief operating officer of BP’s global Exploration & Production business, based in Houston. “We have built our workforce and are making the large investments necessary to create a sustainable, long-term future.”

Over the past two years, BP Alaska’s workforce has grown by more than 40%, to almost 2,000 employees, and its contractor workforce increased by about 2,500, to more than 6,000 jobs. The last time the workforce reached this level was in the 1970s and 1980s, during development of the Prudhoe Bay field.

“BP Alaska has invested about \$30 billion over the past decade to manage the light oil decline,” says Mingé. “That has included drilling 800 additional wells in the Prudhoe Bay field, and developing satellite fields. This year, we’ll invest about \$800 million to sustain our Alaska operations—about half of that will be on facility and infrastructure projects that increase safety and reliability.”

Mingé adds that BP Alaska’s Liberty project, currently under way, will push the limits of extended reach drilling technology to tap an offshore field that contains an estimated 100 million barrels of recoverable oil. Production is expected to begin in 2011.

BP Alaska currently operates 13 oil fields on Alaska’s North Slope (including Prudhoe Bay, Northstar and Milne Point), and owns an interest in six other producing fields, as well as four North Slope pipelines. The company’s 26.4% interest in Prudhoe Bay also includes a large undeveloped natural gas resource.

Overall during 2008, BP Alaska produced an average of around 204,000 barrels of oil per day from North Slope fields. Production came from nearly 2,000 wells.

One of BP Alaska’s big resources—heavy oil—presents technical and economic challenges. Around 20 billion barrels of it lies in the Ugnu deposit, a reservoir overlying the Milne Point, Prudhoe Bay and Kuparuk River oil fields. But it is as thick as molasses and doesn’t flow freely into wells like the lighter oils of Prudhoe Bay,



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Endicott and Northstar.

BP's reservoir scientists and engineers estimate that roughly 10% of that resource, or 2 billion barrels, could be recovered. A heavy oil production test, part of a five-year testing programme, was conducted on the North Slope in August and September 2008 (see page 48 for further details).

Pipeline project: This past April, the formation of Denali—the Alaska Gas Pipeline LLC—by BP Alaska and its partner, Conoco Phillips, got the long-awaited pipeline project under way. In June 2008, BP Alaska's Bud Fackrell was named president of Denali, and in the summer other project executives were selected.

Denali is headquartered in Anchorage and a small field office was opened in Tok, near the proposed pipeline route. This past summer, fieldwork began to support permit applications. The work, done by around 60 people, included cultural resource identification and research, hydrology studies, soil and air monitoring and aerial photography and mapping.

"The fieldwork is a critical step toward meeting the target of a 2010 open season, when buyers and sellers of pipeline space reach agreement," says Fackrell. "Our prefilings and ongoing communication with the US Federal Energy Regulatory Commission will ensure we progress the project on a timely basis."

The largest private sector project in North America, Denali will extend 3,200km (2,000 miles) from Alaska's North Slope to Alberta, Canada, with a possible 2,400km (1,500-mile) leg to US markets. The buried, large-diameter (120–130cm; 48–52 inch), high-pressure pipeline will carry about 4 billion cubic feet of natural gas a day from the North Slope for delivery to Alaskan, Canadian and lower 48 markets. At that rate, it will supply around 6-8% of US consumption. At peak construction, the pipeline will require 10,000 workers on the Alaska portions of the route.

BP Alaska is also working on several fronts to modernize its oil field infrastructure. One of these was a two-year project to replace 25km (16 miles) of oil transit pipelines in the Prudhoe Bay oil field. Completed at the end of 2008, it includes pig launchers and receivers, anti-corrosion chemical injection facilities and leak-detection systems.

Another major effort, an inline inspection programme using state-of-the-art corrosion detection technology, is also under way. Around 225km (140 miles) of North Slope pipelines were inspected last year.

Some of the planned Alaska North Slope Renewal (ANSR) projects under the projects directorate organization, headed by Gary Boubel, include consolidating oil and gas separation facilities (called gathering centres) and flow stations, building new power stations, installing more gas handling and water injection capacity, building new worker housing facilities, and constructing flowlines and transit lines. In addition, facilities will be updated with more sensitive safety equipment that automatically detects and responds to gas leaks or fires.

"With ANSR, we're talking about the potential for investing \$5–10 billion over the next 10 years," says Boubel. "These renewal projects easily rival anything done on the North Slope to date."

Operations integrity: With increased work activity on the North Slope during the past few years, safety and operations integrity as defined by the Operations Management System (OMS) have become an integral part of BP Alaska's field operations, from drilling to oil production and construction activities. In December 2008, the BP-operated Endicott field, situated offshore in the Beaufort Sea to the east of Prudhoe Bay, transitioned to OMS.

"More and more examples of continuous improvement, enhanced control of work standards and integrated activity planning are surfacing at field facilities and other work sites," says Mike Utsler, Greater Prudhoe Bay business unit leader. "BP employees and contractors are actively embracing OMS principles, and that buy-in is resulting in reduced lost time accidents and an overall improved quality of work."



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ALASKA HEAVY OIL

Heavy oil test yields positive results

Successful piloting of CHOPS technology in Alaska boosts extraction of heavy oil on the North Slope, writes Frank Baker

Using the cold heavy oil production with sand (CHOPS) technology for the first time in Alaska, a heavy oil test well in August and September last year brought oil and sand to the surface reliably and sustainably.

Production at the Milne Point site to the west of Prudhoe Bay peaked at about 120 barrels of a sand and oil mixture per day before the test period ended on 15 September. During the course of the experiment, around 700 barrels of heavy oil were processed and shipped down the 1,290km (800-mile) trans-Alaska pipeline.

“Part of the test was to see if the progressive cavity pump, driven from the surface, could pull sand and oil from the reservoir,” says Eric West, BP Alaska’s manager of heavy oil. “This clearly worked, and the reservoir formation had characteristics that may sustain higher production rates as testing resumes next summer.”

Tapped resource: The Ugnu reservoir contains roughly 20 billion barrels of heavy oil in place. “In the light oil business, we try to keep the sand out of the wellbores,” says West. “The CHOPS method has the opposite intent. We intentionally allow sand into the wellbore, and with the sand comes the oil. As sand production continues, channels in the reservoir called ‘wormholes’ form, representing a multi-fold increase in the surface area of the reservoir being contacted. At the surface, oil is separated from the sand in heated tanks and is ultimately processed by existing facilities and shipped down the Trans-Alaska Pipeline.

“Timing is everything in advancing and deploying this technology,” West adds. “After it’s separated from the sand, the oil is still too thick to flow down pipelines to the refineries. It must be mixed with lighter crudes that serve as a diluent. This creates a hard link between the existing light oil business and the potential heavy oil business. If we didn’t have an established light-oil business all around us, it is unlikely that we could make heavy oil work on the North Slope.”

To draw cold, heavy oil, sand and water from 1,220 metres (4,000 feet) below the ground to the surface, a key piece of equipment is the progressive cavity pump. The pump includes a long metal rod with cavities along its length. As the cavities are progressed up through the pump, sand and oil are pulled from the formation into the wellbore.

Grant Encelewski, heavy oil operations team lead, says that the first phase of the CHOPS testing programme will require an investment of around \$70 million. It includes designing and constructing a purpose-built, long-term test kit, as well as four new wells.

The second phase, to be undertaken in 2009–2010, and requiring an investment comparable to the first, will include further expansion of the S-pad, drilling and testing of four more wells, and the possible addition of more well test facilities.

Viscous oil is currently under production on the North Slope at around 50,000 barrels per day, primarily from the Schrader Bluff Formation. Around 100 million barrels of viscous oil have been produced to date. However, the large, heavy oil resource is colder and much thicker than viscous oil.

Commercial production of heavy oil in Alberta, Canada, involves a combination of both cold and thermal recovery processes. North Slope heavy oil development will likely involve similar development techniques. BP Alaska is currently testing CHOPS in the field, but thermal field tests are on the drawing board. These involve introducing heat, via steam or electrical heating.

“Most heavy oil technologies have required years to mature and prove,” says Max Easley, BP Alaska’s senior vice president and business unit leader, Alaska consolidated team. “But we are aggressively pushing this resource to further underpin Alaska’s 50-year strategy. Heavy oil has, and will, continue to generate a lot of attention in Alaska and across the entire Exploration and Production segment. This first success is quite encouraging as we continue this effort.”



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ENERGY TECHNOLOGIES INSTITUTE

ETI projects herald winds of change

The first four projects under the Energies Technologies Institute to focus on turbines

The UK's Energy Technologies Institute (ETI)—of which BP is a founding member—has announced the first four projects to receive funding from this \$1.5 billion initiative. The ETI, which is a unique partnership between global industries and the UK government, revealed a selection of projects that are aimed at developing and demonstrating innovative technologies that can help achieve the UK's energy and climate change targets. Three of the projects, including one in which BP is also a consortium member, will focus on designing cutting-edge offshore wind turbine technologies at reduced cost, while the fourth will demonstrate a new, commercial-scale tidal turbine.

The projects, which together will receive funding of around \$30 million, are geared towards technologies that could be deployed to produce cheaper renewable electricity from 2020. The ETI will also address areas of transport, distributed energy, carbon capture and storage and energy networks; further project announcements will follow later this year.

Among those selected is the Helm Wind project, proposed by E.ON, BP, Rolls-Royce and the University of Strathclyde. It aims to deliver a concept design and feasibility study for a new offshore-specific wind farm and seeks to overcome the issues facing today's systems, including turbine reliability and equipment access for maintenance. Speaking at the London launch on 13 January, ETI chief executive David Clarke said: "Each project has a slightly different focus: they will demonstrate new technologies that can deliver significant cost savings compared to current renewable sources. Offshore wind already works in terms of carbon dioxide reductions and energy security, but these projects will look at system design, installation and operating costs to improve affordability."

BP is one of the original private member companies supporting the ETI, which was proposed by the UK government in 2006. The other companies are Caterpillar, EDF Energy, E.ON, Rolls-Royce and Shell, with the UK government matching support from each private company. It is a 50:50 public-private partnership, based at Loughborough University science park, hosted by a consortium comprising Birmingham, Loughborough and Nottingham Universities.

At the launch, the UK minister for science and innovation, Lord Drayson, said: "This is science and engineering at its most exciting. These are real engineering projects that represent practical steps towards addressing the biggest challenges facing the world—those of energy and climate change."

Visit www.energytechnologies.co.uk

NEWS IN BRIEF

Wind power projects

US

BP Wind Energy and Dominion, one of the US's largest producers and transporters of energy, have announced that they are evaluating wind energy projects in Tazewell and Wise Counties, Virginia, US. The exact size and economic benefits of the projects, which would be jointly owned, operated and developed by the two companies, have not yet been determined, but the partnership has already acquired 1,000 hectares (2,500 acres) of land in Tazewell County.

Exchange of assets

UK

BP and BG Group have agreed to exchange assets in the North Sea. Under the agreement, which aims to strengthen BP's position as a major operator in the region, BP will acquire BG Group's interests in a number of southern North Sea fields and all those in the Easington catchment area.



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In turn, BG Group will take possession of BP's interests in three central North Sea fields and acquire 32% of the Chevron-operated Erskine field from BP.

The respective equity interests will be exchanged without any cash payment. The deal is subject to government, regulatory and co-venturer approvals and completion is expected in the second quarter of 2009.

Exclusive deal

Mexico

BP's Automotive Lubricants has signed a deal with Midas Mexico, displacing Mobil as the chain's exclusive supplier of lubricants.

US-based Midas is one of the world's largest providers of automotive services, with more than 2,500 outlets in 19 countries. In Mexico, it currently operates 42 stores and plans to open a further 12 in the coming year.

The deal—effective from February 2009—says Jorge Bastos, general manager of Automotive Lubricants in Latin America, “is another important step towards our aspiration to be number one value share leader in the passenger car oil market by 2012.”

Platform presentation

Angola

BP Angola and its Block 18 partners, Sonangol and Sonangol-Sinopec International, have presented two deep ocean long-term observation system (DELOS) platforms at the supply base in Luanda.

The DELOS project, the result of five years of research and trials, aims to increase understanding of the deeper water areas in which the hydrocarbon industry now operates and provide long-term environmental monitoring to enhance deep-sea scientific research.

The platforms will remain in place for 25 years and the open day provided a unique opportunity to view the DELOS system prior to their installation.



Second life

REPORT BY Lisa Davison

ROCK ON

Rajesh Ranjan loves his heavy metal music. So much so, that he started his own record label

“My heart lies in rhythm,” says Rajesh Ranjan, engineering standards superintendent for BP Shipping and one third of Cranium—an Indian heavy metal band. “Everything I do is in support of my passion for music.” Ranjan first learned to play the guitar at the age of 14, eventually becoming Cranium’s guitarist and vocalist.

“Indian heavy metal is much like it is anywhere else in the world,” he says, “although we experiment a lot with mixing traditional heavy metal instruments with Indian percussion.”

It was while training as a marine engineer in Calcutta that Ranjan and Cranium first found success, winning competitions on the college circuit, followed by regular ship tours and even a record release in the US. But the band wanted something more.

India’s music chart is dominated by the Hindi style often heard in Bollywood movies. Meanwhile, the country’s heavy metal scene has a small yet loyal fan base, but little opportunity to break into the mainstream market. Ranjan and fellow band members decided to take matters into their own hands, setting up their own record label—Throatlatch Records—in 2000.

They instantly ran into difficulty. “All the music studios are set up to record Hindi music, which sounds very different from the kind of stuff we were playing,” says Ranjan. “One studio manager was very concerned about his speakers. So we built our own. We became rock experts.”

With everything in-house, Throatlatch Records got straight to work scouting the college scene and picking up tips on the musical grapevine about up-and-coming bands. Nine years later, they have signed 12 bands and seen around 60 use their studio. “We followed the indie label model in the UK and US, where we develop a band to a certain level and then a bigger label steps in.” It was the right approach and soon Sony Music had contracted the label.

In 2001, Ranjan was approached by MTV to help create a heavy metal stage at its World Aids Day concert. “MTV was targeting indiepop but didn’t want to alienate the rock crowd,” he says.

Eventually, BP Shipping came calling and Ranjan’s formal training found him working at sea as an engineer, before being posted to the UK in his current role. As a consequence he had to close the studio but his goal is to return to his musical roots. “We’ve been quite low-key of late, but Throatlatch is still going and we plan to sign some new bands soon.”

In the meantime, Ranjan is keeping his eyes open for any possibilities in the UK. “I think there’s an opportunity to fuse UK and Indian heavy metal. A lot of Indian artists are coming to the UK, so you never know. Music is my first love.”

If you have an unusual pastime or passion we would love to hear about it. Contact Horizon at horizon@bp.com



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ENDGAME

HORIZON CROSSWORD

Across

- 1 American writer born 200 years ago (5,5,3)
- 10 Reykjavik is its capital (7)
- 11 Brittle reddish-tinged grey metal (7)
- 12 Immobile interference? (6)
- 15 Not the best flight for sleeping? (3-3)
- 16 Official inspector of accounts (7)
- 17 Soft or spongy tissue (4)
- 18 Inflamed swelling on the edge of an eyelid (4)
- 19 Organized group of admirers (3,4)
- 20 Jane Austen heroine (4)
- 22 'Either a beast or ...' (Aristotle, Poetics) (1,3)
- 24 Talking and thinking excessively about oneself (7)
- 26 Caruso (6)
- 27 The state capital of Montana (6)
- 30 Made holes during military training? (7)
- 31 Catch in or as in a trap (7)
- 32 Geological period linked with the Magnolia State (13)

Down

- 2 Formed by pouring molten metal into a reusable mould (3-4)
- 3 Loss of full control of bodily movements (6)
- 4 Alan starred in M*A*S*H (4)
- 5 A timber wolf (4)
- 6 Egyptian President 1956-1970 (6)
- 7 Ostentatiously rich and luxurious (7)
- 8 Italian composer born 1813 (8,5)
- 9 Commercial or political schemer (7-6)
- 13 Another name for Okavango (7)
- 14 Rare deep red or orange-yellow mineral (7)
- 15 Dishonest or unprincipled (7)
- 21 Italian vermouth (7)
- 23 Its capital is St. George's (7)
- 24 Northern English cake enjoyed by Australian physiologist? (6)
- 25 Mishandle a situation (4,2)
- 28 A bad day in March for Julius Caesar? (4)
- 29 French military cap with a horizontal peak (4)



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For your chance to win a stylish Cross pen, simply fill in the answers and return to Horizon crossword, 1 St James's Square, London SW1Y 4PD, United Kingdom by 13 April 2009.

Solutions for issue six were:

Across: 1 Herbert Hoover; 8 Rhubarb; 9 Amalgam; 11 Gadfly; 13 Allegros; 15 Tarts; 16 Ennoble; 18 Rooster; 19 Resit; 21 Delegate; 23 Anselm; 24 Decagon; 25 Infanta; 27 A Stitch In Time: Down: 2 Ecuador; 3 Boa; 4 Rub; 5 Headliners; 6 Ovate; 7 Engorge; 8 Right-Handed; 10 Mesopotamia; 12 Lasso; 14 Pentatonic; 17 Baron; 18 Relicts; 20 Sternum; 22 Gigli; 25 Ici; 26 Fat. The winner was Mr. Hill, East Sussex, UK.