

Energy Industry Community



Energy Revalued

We have entered a new era of energy revaluation. Rising demand, particularly from China and India, combined with supply constraints has resulted in a near doubling in the price of benchmark crudes, with proportional increases for natural gas and other energy products. The indications from the oil futures markets are that prices will continue to remain within a significantly higher range.

The Middle Eastern/OPEC producers will have to meet most of the world's incremental demand, and their market influence is likely to grow proportionately. OPEC's price target is expected to move from around US\$ 25 to between US\$ 30-50 per barrel, the broader band reflecting price differentials between high-quality benchmark crude and the heavy or sour crudes that constitute most member countries' exports. The OPEC basket is likely to be re-weighted to include a higher proportion of sour and heavy oils.

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On the demand side, we are seeing the emergence of new purchasing groups in Asia, efforts to overcome the mismatch of refinery capacity and available crudes, and accelerated moves to diversify consumer countries' energy mix away from an over-reliance on oil. There are growing calls for oil and gas prices being denominated not solely in US dollars, but in a basket of currencies that reflects each country or region's share of global demand. Taken together, these recent developments may represent an historic structural change in energy markets. They create doubts and insecurity. To foster trust in the markets, and help stabilize prices, there is a need for greater transparency in price formation mechanisms.

So far, higher energy prices have not become a serious drag on global economic growth. Whereas a sharp oil price 'spike' is disruptive, more gradual increases generally have less impact on global GDP. Even so, a sustained higher price environment is likely to have very different impacts on OECD and developing economies that import most of their energy.

The Main Impacts of a Higher Price Environment

- Energy intensive/high tax economies such as Europe are least affected – especially when price rises are cushioned by a declining US dollar – though if prices go higher still it could choke off growth in established economic 'powerhouses' like Germany and Japan.
- Energy intensive/low tax economies, notably the United States, are where well-head price rises have proportionately greater impact on pump prices, potentially leading to a consumer/political backlash.
- Low energy intensive/developing economies are hit hardest, especially the poorer energy-importing countries in Asia and sub-Saharan Africa. On average 1.6% of total revenues in these countries are already being lost. Higher oil prices also delay the transition from environmentally destructive usage of biomass fuels, such as burning wood, towards commercial gas, kerosene and electricity.

The energy industry's approach to global climate change issues is rapidly moving on from questioning the science to exploring new ways to address the expected impacts.

Key Areas for Research and Investment in New Technology

- Clean coal technologies – particularly with respect to developing countries such as China, India and South Africa, whose domestic reserves of cheap and plentiful coal provide an economically attractive alternative to imported oil and gas. However, higher volumes of conventional coal usage would greatly accelerate carbon emissions, so developing cleaner technologies that are both effective and affordable must be a high priority goal.
- Nuclear energy – where the well-known negatives of radioactive waste and potential arms proliferation are increasingly outweighed by nuclear power not contributing to climate change. The key hurdles are to overcome social and political objections in developed countries, to extend the nuclear option on a need-driven and affordable basis to developing countries, while also ensuring that safeguards are in place against nuclear proliferation, terrorism and industrial accidents.
- Alternative fuels – especially substitutes for gasoline or diesel in motor vehicles, which is where the sharpest increase in global demand is anticipated. Current oil prices place 'climate-neutral' biomass fuels such as ethanol and biodiesel in a more competitive position, though agricultural tariffs still pose a barrier to global markets.

Growing concern over climate change is likely to translate into tighter government regulation regarding fuel quality, plant emissions and safety that will entail further costs to the industry and consumers. At the same time, the energy industry must address greater challenges to systems' integrity and security, with offshore stations, pipelines, major ports and electricity grids seen as increasingly vulnerable to threats ranging from terrorist attack to systems overstretch. Perceptions of global risks and priorities are changing so rapidly that insuring against business interruption has become more expensive than property insurance.

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The energy industry is taking concrete steps to reduce levels of energy poverty, specifically through an initiative to design scalable models for the electrification of villages based on community needs, and to construct a pilot project on the ground within the next year. It is also taking action against corruption, with 64 companies in engineering and construction, energy and mining and metals – totalling US\$ 400 billion in annual revenues between them – already signed up to the PACI (Partnering Against Corruption Initiative) Principles. While progress has been made, the work

so far represents only the early stages of a long-term campaign against widespread corrupt business practices that at one time appeared inevitable.

That sense of inevitability is finally being eroded, just as former ‘certainties’ about cheap energy and its environmentally ‘risk-free’ consumption have also disappeared. In a rapidly changing world, the very fundamentals of energy – price, availability, security, acceptability – stand in need of constant and careful re-evaluation.



Christoph W. Frei
Associate Director, Energy Industry and Issues

Weighing In on Climate Change



Bud Ris
Senior Fellow, Centre for Global Insight
and Coordinator for the G-8 Climate
Change Roundtable, World Economic
Forum

Of the various societal issues discussed at the Annual Meeting in Davos, perhaps none exhibited a more significant shift in direction than climate change. Faced with the impending implementation of both the Kyoto Protocol and the EU Emissions Trading System, much of the debate on climate change this year focused on the feasibility and cost of various solution strategies – rather than on whether the problem poses a real threat or whether the science is valid.

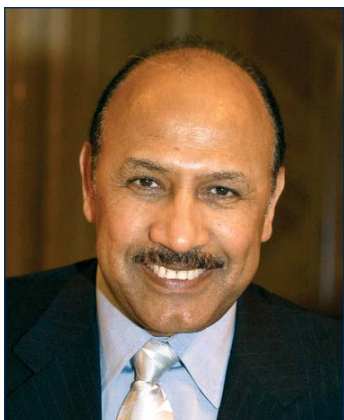
Indeed, there is now growing consensus within the scientific community that climate change is already under way. Several recent studies have shown that the warming trend of the last several decades is beyond the bounds of natural variation. There is still

plenty of argument about just how hot it will get when, and which parts of the globe will be most seriously affected, but there is little doubt among scientists about whether the time has come to act.

So it is highly appropriate that some of the Forum’s member companies have come together under the auspices of our G-8 Climate Change Roundtable to advise Prime Minister Tony Blair on the climate change agenda which he will oversee during the United Kingdom’s presidency of the G-8. The group will address key questions such as: 1) how to ensure companies will obtain long-term value for taking action on climate change; 2) how to resolve inconsistencies among various regulatory regimes; 3) how to assist emerging markets in the development of low-carbon energy technologies; and 4) how to identify common metrics that can be used to measure corporate progress.

The Roundtable will meet with Prime Minister Blair shortly before the G-8 Summit in Gleneagles, and then again after Gleneagles to review and assess the G-8 outcome. The World Economic Forum is very pleased to provide a cross section of our member companies with the opportunity to have a significant input into the G-8 process.

Chairman's Message



Abdallah S. Jum'ah, President and Chief Executive Officer, Saudi Aramco, Saudi Arabia

Humankind's discovery and harnessing of energy resources has played a defining role in shaping civilization as we know it today, and this trend will only intensify in the future. Considering both the standard of living aspirations of developed countries and their hopes to alleviate energy poverty and improve the quality of life for their people, the importance of pursuing prudent, forward-looking and yet pragmatic energy policies and strategies cannot be overemphasized. Also, the need to address short, intermediate and longer term energy issues and priorities comprehensively, across a wide spectrum of options and choices, is self-evident, and especially so when we take into account the needs of both the present and future generations.

Three broad themes, each containing important issues and concerns, may assist in providing greater focus to the activities of the energy community of the World Economic Forum. The themes to receive special attention during 2005 are:

- **Better Information** – Assisting businesses and governments in long-term energy planning through knowledge enhancement. More knowledge is required on topics such as energy supply and demand, a future energy vision, realistic assessment of various energy options, and selected energy-related issues such as the need to pursue both economic and environmental priorities, their importance to society, security of supply, future investment requirements and issues relating to energy taxation and regulation.

- **More Balanced and Pragmatic Energy Policies** – Helping to shape energy policy through dialogue that is consistent with public and business interests. The dialogue necessary to shaping energy policy will involve appropriate international or regional energy institutions, national governments, as well as energy producers and consumers.
- **Promoting Public Trust** – Enhancing public awareness of energy from various perspectives of interest and importance to stakeholders. Efforts to raise awareness must seek to educate both the general public and policy-makers on the vital role energy plays in improving our lives. These efforts will also address major public concerns, such as what the energy industry has achieved to date in terms of health and safety or in the environmental arena, and clarify future plans to be sensitive and responsive to public concerns.

The agenda outlined above covers both the main energy sources in use today, namely oil, natural gas, coal, conventional and nuclear electricity, as well as a new generation of renewable and hydrogen technologies that hold promise for tomorrow.

The energy community of the World Economic Forum can look back with pride at the achievements made during 2004, in terms of dialogue on crucial issues involving both members of the energy community and various stakeholders around the globe. I take this opportunity to thank the community members for their support and cooperation, and would like to acknowledge the efforts of our outgoing Chairman, Tan Sri Hassan Marican. I look forward to working closely with you to make 2005 a year of further accomplishments.

The Impact of Higher Oil Prices

Given the sharp surge in oil prices over the last year to a range of US\$ 40-50 for benchmark crudes, and with the futures markets indicating that prices will remain at these levels, it comes as no surprise that the price of oil and its broader economic and social impacts have risen to the top of the agenda. And not just for those involved in the global energy industry, but for governments, multilateral organizations and NGOs.

The main drivers of higher oil prices are growing demand, especially from China and India, combined with limited spare production capacity. This has created a climate of uncertainty in which any perceived threat of disruption to supply – whether it be a deteriorating situation in Iraq, international terrorism, or political instability in the Middle East, Nigeria, Venezuela or any other major producer – provokes concerns over security of supply which immediately feeds into international oil markets.

Other factors contributing to higher prices include refinery bottlenecks, shipping shortages and the growing importance of hedge funds and other speculative investors in commodities markets, especially oil futures.

It has been pointed out that oil prices were higher in real terms during the spikes of the 1970s and early 1980s. The consensus view is that prices will remain within a higher band of US\$ 30-50 a barrel. Markets must decide at precisely what level, although major oil producers could act to ensure relative stability and so avoid economically damaging price surges. Changes might be necessary to the mechanisms whereby prices are set by lighter benchmark crudes in order to reflect the growing proportion of heavier crudes in global output.

“Are we going through a structural change in oil markets?” asked Fatih Birol, Chief Economist at the International Energy Agency. “The answer is ‘yes’, though not because we are close to reaching peak production.”

On the supply side, a higher price environment is expected to spur investment in both exploration and increasing production capacity, particularly in the Middle East, after years of underinvestment.



From left to right: Thierry Desmarest, Chairman and Chief Executive Officer, Total; Hassan Marican, President and Chief Executive Officer, Petronas; Ali bin Ibrahim Al-Naimi, Minister of Petroleum and Mineral Resources of Saudi Arabia; Daniel Yergin, Chairman, Cambridge Energy Research Associates; Ahmad Fahad al-Ahmad Al Sabah, President of the OPEC and Minister of Energy of Kuwait; Kenneth Rogoff, Professor of Economics and Director of the Center for International Development, Harvard University; Adnan Shihab-Eldin, Acting Secretary-General, Organization of the Petroleum Exporting Countries; Fatih Birol, Chief Economist and Head, Economic Analysis Division, International Energy Agency

Middle Eastern countries with the largest reserves will play an increasingly important role in meeting additional demand, and their ability to influence global energy markets will grow proportionately.

On the demand side, the main structural changes involve additional demand coming from China and other fast-growing Asian economies, resulting in the emergence of new purchasing groups and even shifts in how seasonal factors impact on prices.

A higher oil price environment should encourage further diversification of energy sources away from oil towards natural gas, coal and nuclear generation. However, practically all growth in demand from OECD countries will come from the transportation sector, where it is currently harder to provide economically viable substitutes. Continuing high prices will accelerate investment in hydrogen technology and hybrid vehicles. This situation should also encourage broader use of alternative fuels such as ethanol and biodiesel, and push energy efficiency higher up the agenda.

Global climate change is also likely to impact on energy prices – through direct taxation, emissions trading and the cost of new technologies for treating ‘dirtier’ fuels like coal and carbon sequestration.

Energy Vision

Greater Diversity

The world's growing energy demands and higher prices increase the urgency of diversifying tomorrow's energy supply. Yet, fossil fuels will remain by far the most important energy resource in the foreseeable future.

The transition from oil to natural gas is seen as the next major development, though coal is also likely to play an increasing role in the energy mix, and nuclear generation is becoming more socially acceptable because it does not contribute towards global warming. These developments raise major issues concerning:

Security of Supply

The most pressing current issue, security of supply, must first be guaranteed if other environmental and social concerns are to remain on the energy agenda. Diversifying energy sources, both geographically and by type of fuel, is the best guarantee of security of supply. Further investment and/or research is needed in:

- Transportation infrastructure – to bridge the increasingly large distances between available energy resources and principal markets.
- New generation nuclear fission plants – such as the 'pebble-bed' reactors that are resistant to weapons proliferation and designed to minimize radioactive waste and facilitate decommissioning.
- Renewables for electricity generation – including geothermal, solar/photovoltaics (particularly suited to remote areas suffering from energy poverty) and wind, tidal and wave-generated electricity.
- Biomass fuels – particularly liquid substitutes such as ethanol and biodiesel which might reduce over-reliance on oil for transportation needs.
- Hydrogen cell technology – also a potential oil substitute in vehicles, though as an energy carrier rather than a source it requires power generation using other (fossil, nuclear or renewable) fuels.

Climate Change

It is becoming harder to challenge the scientific basis of climate change, so action should be taken sooner rather than later. Both public and private investment is needed, with the energy industry well positioned to contribute through:

- Carbon sequestration: advancing technologies for capturing carbon emissions, designing or retrofitting power stations to this end, and developing efficient and cost-effective methods to sequester carbon dioxide in retired oil reservoirs or saline aquifers.
- Developing technologies for transforming 'dirty' fuels such as coal into 'cleaner' energy sources with lower carbon emissions.

Energy Vision Agenda

The shift towards a greater diversity of energy sources raises the need for:

- Improved information pooling, so that key players can see global energy issues in the round rather than from diverse perspectives.
- A balanced and pragmatic approach focused on what the energy industry can achieve together to provide for the world's future energy needs, rather than anticipating competition between different fuels.
- Concerted action where energy resources are subject to trade barriers, such as agricultural tariffs hindering biofuels' access to world markets.
- An industry-wide initiative to earn greater public trust, including greater willingness to discuss energy-associated problems such as climate change.

Climate Change: Challenges and the Response of the Global Oil and Gas Industry



Jeroen van der Veer, Chief Executive, Royal Dutch/Shell, Netherlands

Our primary responsibility is to meet the energy needs of our customers in ways that generate the profits necessary to reinvest in our business and pay competitive returns to our shareholders. Responding to the climate challenge is an essential part of this for three reasons:

- First, customers, employees, governments and shareholders expect us to do so. Not responding would be bad for the future of our business – for the strength of our brand, our ability to attract high-quality staff and our capacity to influence the regulatory framework.
- Second, measures to drive reductions in carbon emissions – such as the EU Emissions Trading System – will increasingly affect how we operate. We need to find new ways of conserving energy, despite the additional processing required to refine cleaner fuels. Taking account of the future costs of carbon emissions in investment decisions helps us to do so efficiently.
- Third, developing ways of supplying our customers with less carbon intensive energy presents opportunities for profitable future business.

Being on track to stabilize atmospheric carbon concentrations – at about twice the pre-industrial level – will require global emissions to be around the same level in 2050 as at the beginning of this century, and to be falling sharply. This is while energy needs are expanding rapidly to support the economic development required to raise living standards for billions of people. The latest estimates by the International Energy Agency suggest global energy consumption could rise by 60% by 2030.

We can only meet this profound challenge by finding new ways of supplying and using energy. There are many options, but we should not underestimate the problems to be overcome – including other environmental concerns – or the time it will take. New technologies must be made competitive, particularly for developing countries. Their introduction must take account of the existing investment in long-lasting energy infrastructure.

In Shell, we are working on a range of possibilities, on our own and with others. The most immediate benefit is from enabling the increasing use of gas by delivering more supplies from distant resources. As well as being a less-carbon intensive fuel, combined cycle gas turbines provide much greater generating efficiency. Longer term we are investing to develop commercial wind and solar power.

We are working to create new transport fuels that emit less carbon and support the development of more efficient engines. These include advanced biofuels from waste materials, which do not compete with food production. And we are pursuing the potential for hydrogen as a carrier – with fuel cells for local power generation as well as in vehicles. We are also working on ways of storing carbon emissions in closed underground formations or of fixing them in durable compounds which could be used as building material.

Alternative Fuels: Grow Your Own Gasoline

An Interview with **Ildo Luis Sauer**



Ildo Luis Sauer, Director, Gas and Energy, Petrobras, Brazil

Q: What do you see as the potential for alternative fuels in mitigating climate change?

Sauer: There are many valid approaches to reducing carbon dioxide emissions, from increased energy efficiency to carbon sequestration. The particular expertise we have developed in Brazil is focused on reducing our dependence on liquid fossil fuels, primarily oil. This still remains the most difficult part of the energy mix for providing renewable and economically viable alternatives.

We began early on, in response to the first ‘oil shock’ of the 1970s, developing ethanol extracted through sugarcane fermentation processes as an alternative to gasoline. Petrobras’s role in what is now the world’s largest renewable fuel programme is mainly through blending ethanol with gasoline, and then its distribution and sales. All gasoline in Brazil now has 25% ethanol content, and production is equivalent to 250,000 barrels a day. As a direct result of using this renewable resource as an automotive fuel, it is estimated that carbon dioxide emissions are reduced by 26 million tons each year.

Also, unlike many other alternative energy sources which are capital intensive but do not generate much employment, producing ethanol from sugarcane has already created nearly 900,000 jobs in Brazil. Many of these are concentrated in poorer

and less developed rural areas. So, as well as being a cleaner and sustainable energy source, the production of ethanol as an automotive fuel assists in reducing poverty and providing a more equitable distribution of the benefits of globalization – two other key priorities facing the world alongside climate change.

Q: What future do you see for such alternative fuels?

Sauer: I think we are going through a transition period in which all possibilities for diversifying our energy base, from nuclear to biomass, need to be explored further. In Brazil we have very favourable conditions for growing biomass, and the government is launching an incentive programme to move towards large-scale production of biodiesel. This is a blend of vegetable oils produced from castor beans, soya, sunflowers, babassu, palm oil, or animal fats, which is then combined with fossil diesel fuel. Currently a 2% blend of biodiesel with fossil diesel is allowed.

In terms of price, it becomes competitive when the oil price remains above US\$ 30. And again we are talking about energy being produced from renewable feedstock. If you put together biomass and hydropower, around 35% of Brazil’s energy matrix comes from renewable sources, which is one of the highest percentages in the world.

I believe that in South America, in Asia and in Africa, the adoption of these alternative liquid fuel technologies can create immense opportunities. It will reduce both carbon emissions and our dependence on fossil fuels and, at the same time, has enormous potential to generate employment. What we need is alliances and cooperation between countries and energy companies, rather than competition between different sources of energy. In the 21st century, surely there is a place for all.

Global Risks and System Vulnerability

The larger and more integrated the system is, the more serious the consequences if it is disrupted by external attack or internal failure. By its very nature, the global energy industry operates on a large scale utilizing highly integrated systems, thereby increasing both its potential vulnerability and the scale of 'chain reaction' impacts resulting from any serious disruption.

Some of these risks are industry-specific. Others, such as the effects of a global pandemic or bacteriological attack, are far broader; though their disruptive impact would be greatest where highly integrated systems are involved.

The risks considered most urgent are related to:

- International terrorism – Oil is frequently cited among the top five grievances published by Islamic terrorist organizations, who object to both the price being 'artificially' low and to the presence of foreign corporations in Islamic countries. Attacks on energy infrastructure have the potential of precipitating far broader economic damage, and therefore form part of a long-term strategy of conducting a war of economic attrition.

The most vulnerable points are transportation 'choke-points':

- In major shipping lanes such as the Straits of Malacca, where threats of attack or piracy are likely to increase through closer cooperation between terrorist and criminal organizations. To counter this three regional navies have begun coordinated patrols.
- At key oil and gas import terminals, such as the ports of Rotterdam or Los Angeles, which could be closed down more effectively through chemical or bacteriological than conventional attack.
- Oil refineries/petrochemical plants, where terrorists might deliberately target toxic materials to cause maximum disruption.
- Strategic electricity substations and transformers which ensure supply to major cities.

Other risks include:

A higher incidence of industrial accidents or breakdowns due to 'systems stretch', both in terms of pressures on the physical infrastructure in place (oil platforms, refineries and electricity grids) and the personnel operating it.

The impact of a major epidemic, now seen as inevitable, and the speed with which it would be spread through modern air transport to become a global pandemic.

Bioterrorism (e.g. anthrax, smallpox), for which the capabilities already exist and which could be targeted at key energy import facilities.

Possible countermeasures include improving information flow systems:

- For tracking shipping or other infrastructure that might be attacked.
- For responding more rapidly to industrial accidents, including oil spills.
- For being able to react more effectively to pandemics or bioterrorism, with further investment needed in creating both electronic health records and antibacterial vaccines.

On the other hand, it was pointed out that too much public access to sensitive information, such as the layouts of refineries and where toxic chemicals are stored (which is increasingly required by disclosure regulations) could in itself pose a security threat.

Overcoming Energy Poverty

An Interview with **Bob G. Elton**



Bob G. Elton, President and Chief Executive Officer, British Columbia Hydro and Power Authority, Canada

“There are 1.6 billion people around the world, mainly in South Asia and sub-Saharan Africa, without access to electricity,” says Bob Elton, who leads the World Economic Forum’s Energy Poverty Roundtable. “The average person in an OECD country uses around ten times as much energy as in one of the poorer, developing countries.” And energy poverty is unlikely to improve over the next 25 years, despite planned extensions of electricity grids. The International Energy Agency (IEA) forecasts there will still be 1.4 billion people lacking access to electricity in 2030.

Elton is convinced that “overcoming energy poverty is a very important issue, and has an integral role within the World Economic Forum’s priorities of addressing the broader problems of poverty and more equitable globalization.” That so many people still lack access to electricity is, he says, “a problem to be solved, and one where solutions do exist. Logically there is a role for the private sector, and especially energy companies, in this process. But I firmly believe they should only become engaged if there is something concrete that can be done.”

“What we need to create is a coalition of the willing, with energy companies working together with the World Bank or regional development banks to launch a pilot project that is scalable and can serve as a model for further projects in developing countries.”



Global city lights. The eastern US is lit up by their cities, while the interiors of Africa, Asia, and South America are (now) dark and lightly populated. (Image by Craig S. Smith on data from the Defense Mapping Agency)
Source: <http://photo.state.gov>



North America, Europe, and Japan are brightly lit
Asia, Australia and South America remain dark
(for comparison) (Photo by David L. McKay, NASA GSFC, based
on data from the Advanced Very High Resolution
Radiometer (AVHRR) on the Earth Radiation Budget
Experiment (ERBE) satellite. Photojournal, jpl.nasa.gov)

After intense discussions between energy companies, NGOs and funding agencies at Davos, the decision was taken to go ahead with “a rural electrification programme in a village that is not connected to the grid system, building a self-sufficient energy generating system based on local needs and developing a scalable model that can be rolled out elsewhere.”

The pilot will be launched in Africa and India. “Of course there are other priority areas”, says Elton, “but the very poorest countries can also be the most difficult to start up a pilot scheme.” The task force has agreed on an estimated budget of US\$ 2 million and given itself just one year to deliver.

The first steps towards defining a working model for the pilot scheme are already in place. A ‘pilot model screening exercise’ is currently underway, to report back by mid-April. As envisaged, the model will comprise three layers, each with a distinctive role:

- An international platform or programme office, responsible for accumulating global know-how on key areas such as investment funding and technical sourcing, and for ensuring that the pilot embodies globally scalable qualities. It will be staffed by delegates from companies involved in the initiative, with the core team being provided by Cinergy, Vattenfall, Eskom, BP, Arriva and Ormat. The project manager is from BC Hydro and the World Economic Forum will act as coordinator.
- A first regional hub, working with a parent company and national contacts to build know-how on local sourcing and training that can then be applied to rolling the pilot out on a national or regional scale.
- The local cooperative in the village where the electrification programme is being installed. Its responsibilities include building and operating the system, training local staff, before ownership and full responsibility for running the system is transferred to the local cooperative or company.

Partnering Against Corruption

An Interview with **Hassan Marican**



Hassan Marican, President and Chief Executive Officer of PETRONAS, Malaysia

“I believe that the Partnering Against Corruption Initiative (PACI) has come a long way in a relatively short space of time. The Energy Group first started discussing what action to take against corruption in 2002, amidst growing realization that levels of bribery and corruption in some countries posed a serious problem for private sector companies in general and the energy sector in particular.

Today, PACI is a cross-industry initiative that brings together key players in engineering and construction, mining and metals, as well as the energy sector, who have signed up to a voluntary set of Principles for Countering Bribery – derived from Transparency International’s set of statements against bribery and corruption. The number of signatories rose to 63 companies by the end of the Annual Meeting 2005, which I consider a great success.

I see building on this initiative as an ongoing process, and we still have a long way to go. Among the issues to be addressed are:

How effective can a self-imposed set of principles be?

As we move forward, priority must be given to signatories’ implementation of the PACI Principles and to the verification and monitoring of those implementation procedures. In order to be seen to be effective, these procedures must have real teeth.

Does the PACI create legal issues for companies that sign up?

There is clearly some concern, and particularly among energy companies which already have their own anti-corruption statements in place, over how companies’ internal and broader PACI commitments would be aligned. Some companies have not yet signed up because they are unsure whether doing so would create a legal obligation and, therefore, open up the possibility of public litigation in any of the jurisdictions in which they operate. Clarifying these issues would open the way for more companies to sign up.

How do we broaden the number of companies subscribing to the PACI Principles and sustain the momentum?

I believe a two-pronged approach should be pursued of deepening the signatories’ base within the energy, engineering and construction, and mining and metals groups, while at the same time opening up adherence to the PACI Principles to companies in other industry sectors.

The main challenge is to engage the United Nations and its agencies, the World Bank, the European Bank for Reconstruction and Development and other multilateral funding bodies in meaningful dialogue on how to counter corruption. The PACI engineering and construction group’s task force and Transparency International have reached agreement with the World Bank on the inclusion of anti-bribery language as part of the bidding process for infrastructure projects that it finances. This should provide a blueprint for other industry groups.

The PACI’s broad-based adherence to a self-imposed set of principles is, I believe, a powerful tool in countering corruption. This is because it is a voluntary commitment, which relies on a combination of peer pressure and the concern of each company involved to preserve its reputation for integrity.”

Partnering Against Corruption Initiative: Progress To Date



Mark Pleth, Chairman, Working Group on Bribery, Organisation for Economic Cooperation and Development (OECD), Paris; Wayne W. Murdy, Chairman and Chief Executive Officer, Newmont Mining Corporation, USA; Alan L. Boeckmann, Chairman and Chief Executive Officer, Fluor Corporation, USA; Hassan Marican, President and Chief Executive Officer, PETRONAS (Petroleum Nasional), Malaysia; and Jermyn P. Brooks, Member of the Board of Directors, Transparency International, Germany

2002 – The World Economic Forum’s energy and engineering and construction communities first address how to counter corruption at the Annual Meeting in New York. The aim: To eliminate bribery in business transactions, through demonstrating a common commitment to improving standards of integrity, transparency and accountability, to the benefit of both business ethics and civil society.

2003 – The mining and metals community joins the two existing industry groups in supporting the Partnering Against Corruption Initiative (PACI). The engineering and construction community adopts a precursor set of PACI Principles derived from Transparency International’s Business Principles for Countering Bribery.

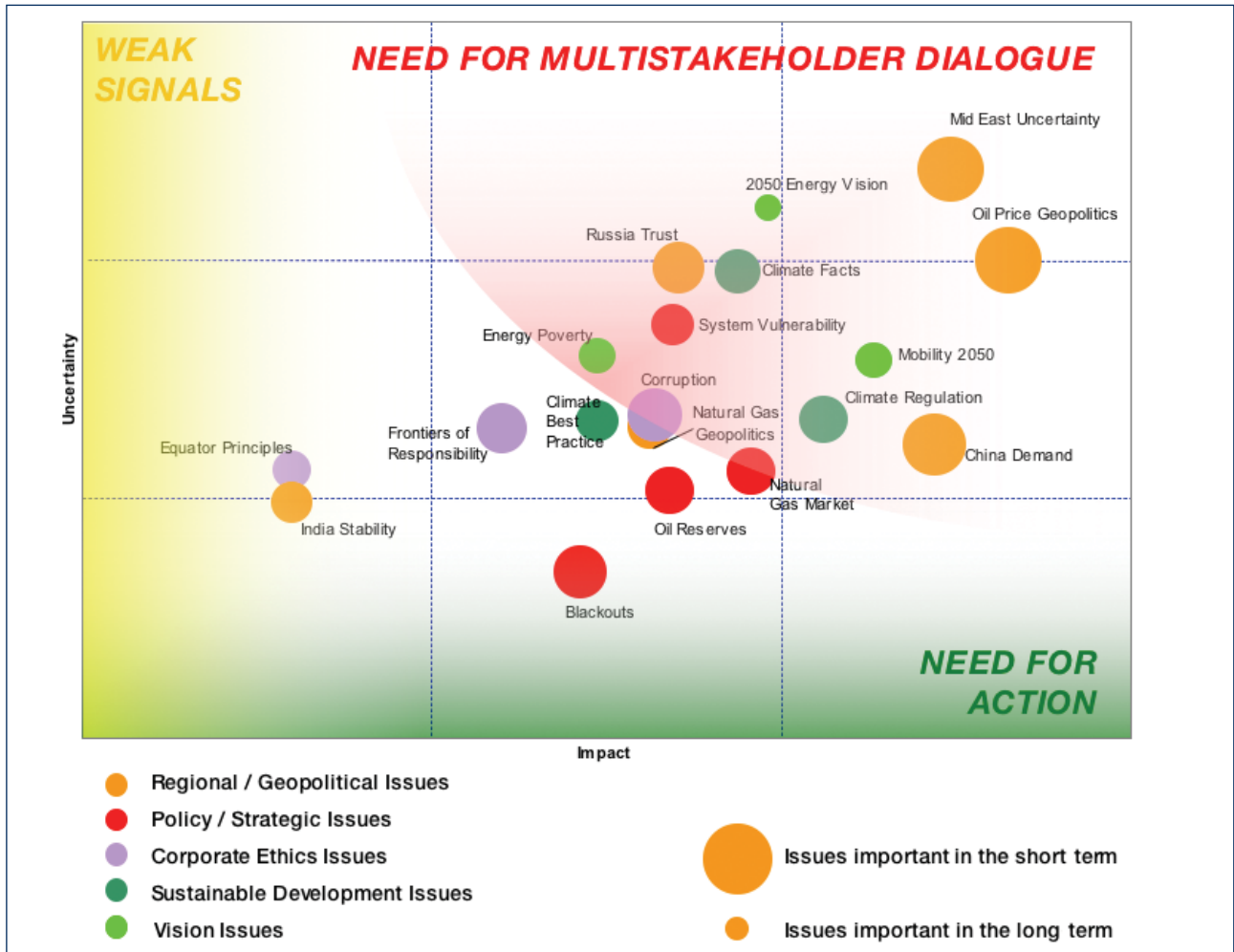
2004 – The decision is made to set up PACI as a cross-industry initiative, with its own multi-industry Initiative Board and a Task Force with delegates from key companies in the three industry communities. The PACI Principles for Countering Bribery and the related support statement are finalized. A legal opinion is obtained on both.

By year-end, more than 30 companies sign up to the PACI Principles and, through engagement with PACI’s energy and construction task force and Transparency International, the World Bank agrees to include anti-bribery language in the bidding process for the infrastructure projects it finances.

2005 – The PACI Principles for Countering Bribery are published. They demonstrate a voluntary commitment to zero tolerance on corruption built around a common language covering all aspects – including so-called “grey areas” – of bribery in business transactions. A total of 63 companies sign their commitment to anti-corruption before the close of the World Economic Forum’s Annual Meeting in Davos.

The decision is taken to build up the PACI Principles into a tangible instrument in the battle against corruption by identifying implementation and monitoring mechanisms, to forge closer links with the investment community, and to expand the scope of PACI beyond the three business communities already committed by reaching out to other business sectors.

Energy Issue Map



Key Issues for the Energy Industry

The key issues selected and their priority are based on a survey conducted with 51 CEOs of global energy companies, 27 of whom (53%) responded.

The Issue Map Explained

Key issues are positioned according to three parameters:

- The **horizontal axis** indicates how large an impact the issue is expected to have on the energy sector.
- The **vertical axis** indicates the degree of uncertainty surrounding an issue.
- The **size of the bubble** indicates distance in time to when the issue becomes pressing. Immediate concerns are shown by larger bubbles, while small bubbles indicate issues that will become important only in the longer term.

How to Read the Issue Map

- **High impact/low uncertainty** issues require immediate action – by industry associations, political decision-makers, etc.
- **High impact/high uncertainty** issues would benefit from multistakeholder dialogue.
- **Low impact** issues are either considered unimportant **or** they have not yet registered on CEOs' radar screens. Where the survey reveals sharp differences over the impact of an issue the second interpretation is more likely, in which case the World Economic Forum may seek to raise awareness.

Most Urgent Issues

CEOs considered oil price geopolitics and uncertainty over supply from the Middle East as the highest ranking issues, whereas the previous year's survey had natural gas geopolitics and the LNG market as top issues.

Regional/Geopolitical Issues

The Middle East and concerns over political stability/security of supply ranked first in terms of both impact and immediacy. China's steadily growing energy demand was seen as having the next largest impact. On the supply side, Russia, the largest non-OPEC producer, ranked lower in terms of overall impact but much higher in uncertainty over such issues as Yukos and transparent governance. India, despite its huge growth potential, still ranks low on the agenda.

Vision Issues

CEOs ranked the three forward-looking Vision Issues as the next highest category. Action is needed most urgently on Mobility 2050 issues such as developing fuels of the future and related infrastructure. Next in need for action, though surrounded by higher levels of uncertainty, is the 2050 Energy Vision of the future supply mix and related issues of what energy resources will then be available, economically viable, politically and socially acceptable, and whether the new technologies are affordable and/or environmentally sustainable. Energy Poverty issues focus on the 1.6 billion people in the world without access to modern energy resources and what can be done to remedy this situation.

Climate Change

Featured high on agendas of energy CEOs, though they are more immediately concerned about impending regulation and still remain uncertain about the scientific basis of 'climate facts'. Adopting best practice on climate change issues, by learning from competitors, is not yet considered important.

Corporate Ethics

The highest ranking ethical issue was how to deal with corruption – the focus of the World Economic Forum's Partnering Against Corruption Initiative. Questions concerning the frontiers of responsibility have declined in terms of perceived importance since the Iraq intervention. The Equator Principles are not highly ranked since most companies appear familiar with these issues.

Policy/Strategic Issues

Decisions on how to deal with changes in natural gas markets and the levels/booking of oil reserves were seen as the most urgent priorities. Electricity blackouts, which ranked highly last year, are now seen more in terms of broader system vulnerability including disruption to pipelines, ports and other energy transportation.

Feedback and Comments

• Issues that should rank higher on:

Impact: Energy poverty; India demand/stability; natural gas geopolitics; frontiers of responsibility.

Certainty: Climate facts, where surprise was expressed at being linked to such high levels of uncertainty.

Time Frame: Energy Vision 2050 issues are likely to become more urgent over the shorter term and need to be addressed now.

• Key issues not included in the survey:

- The revived role of nuclear power and its acceptability
- Changes in demand-side behaviour and moves to greater energy efficiency
- Investments needed to tackle both energy poverty and climate change.

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The Energy Governors Community of the World Economic Forum consists of 50 top executives of the world's leading energy firms. The community identifies the key issues that are relevant to its industry, discusses them with thought-leaders and translates them into pragmatic actions that are in line with the World Economic Forum's mission statement: Committed to improving the state of the world by engaging leaders in partnerships to shape global, regional and industry agendas.