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Office of Environmental Initiatives
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Climate Change International COP 6: [Conference of the Parties]: Personal Notes

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- b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

Joe Goffman 4/24/00 (Joe Elizabeth)

- why wouldn't you hold cost cap for Senate floor to buy fixed votes?
- legal issue? state debt?
- won't cost cap reduce incentives for up front investment in emission reductions, since it takes away long-term downside scenario/present value of reduction investments.
- bet senator with a
enviro groups re. expectations
 - NRDC
 - Sierra
 - Clapp
 - Ozone
 - WWF
 - UCS

- The one insurmountable issue for us is developing country participation. We will never overcome an argument based on fairness and based environmental integrity.

THE WHITE HOUSE

Prank 4/25

- 1) Domestic vs. International
(how much we must do at home)
- 2) Developing Countries
- 3) Hot Air / Trade caps
- 4) Sinks

- more at stake here than climate.
after Seattle need to show
that international negotiations
make sense and are doable

- July - Russia - political mtg
- Sept. - RAS

supplementarity/domestic action/etc. is
top issue (Prescott).

-pre-Kyoto mtg w/ President + Kerry
et al.?

Teresa - business is asking for some
"pricing" mechanism - measure
that applies across the board.

How can we be pricing targets to
developing countries when we are
not even meeting our own target
- Prescott.

SHELL: CLIMATE CHANGE POSITION

Two contextual points:

- Global energy demand is growing. Total Primary Energy Demand will probably double during this century. Most growth will take place in non Annex 1 countries. Energy demand saturation is a function of economic well-being. It falls off at ~ \$25k per capita.
- Energy markets are in a state of transition. This is largely driven by technological innovation.

Shell believes that:

COMPETITIVE ENERGY MARKETS coupled with positive SUPPORT from governments will provide a solution to the problems of global climate change.

- A LIBERALISED (i.e. deregulated) energy market will promote the ongoing CARBON SHIFT from coal to oil to gas; furthermore, the steep rise of INTELLECTUAL AND FINANCIAL INVESTMENT in alternatives such as hydrogen and renewables will support this decarbonising trend.
- A POSITIVE approach by governments towards removing DISTORTIONS in the energy market rather than relying on COMMAND AND CONTROL mechanisms will help rather than hinder these market changes.
- The growing gas industry will play an important part by, in large, SUBSTITUTING COAL whilst at the same time pursuing an energy future based on GAS AND ALTERNATIVES
- SUPPORT AND ENCOURAGEMENT FOR CLEAN TECHNOLOGIES and environmentally efficient management practices will further reduce environmental impacts including ghg emissions.
- OIL IS STILL IMPORTANT.

What is Shell doing?

- Shell's energy investment decisions are based on what makes long term commercial sense, our view of how the global energy system will develop, and how consumer demands and expectations are changing; this decision-making process includes consideration of the potential problem of climate change.
- Good housekeeping makes financial sense. Shell companies have reduced emissions by over 10% of 1990 levels by disciplined resource management.
- Shell is stepping up its efforts to cut flaring and increase energy efficiency at its plants. Flaring will cease by 2008. This will reduce Shell's total greenhouse gas production by over 50%.
- Shell leads in natural gas, the clean fuel of the next three decades; we have large reserves and continue to be the largest producer in the private sector.
- Alternatives are a priority; hydrogen, in particular, and selected renewable technologies offer significant commercial opportunities in the near term.
- Our financial decision making now includes a consideration of the potential cost of carbon in new investments, and we are developing carbon trading techniques and competencies.
- Climate change does not respect borders, either on the ground or in the mind. So Shell listens to the concerns and actively supports efforts to improve our understanding of the problem.

What does Shell want?

- A CONSTRUCTIVE POLICY FRAMEWORK (i.e. minimum government interference): Allow energy markets to get on with their job, and by doing so, shifting resources to lower carbon fuels.
- MARKET LIBERALISATION/DEREGULATION: Governments can help by creating proper incentives in the marketplace, by removing distorting subsidies, and by providing constructive encouragement including marketing best practice.
- Governments will achieve climate protection policy goals quicker by WORKING WITH THE GRAIN OF THE MARKET.

N.B. See Moody-Stuart's Stavanger speech: August 22, 2000
"Shaping the future of energy industries – an energy company perspective."



The Introduction of Hydrogen Into Energy Markets

Mark Moody-Stuart

Chairman, Royal Dutch/Shell Group



Mark Moody-Stuart is Chairman of The "Shell" Transport and Trading Company and of the Committee of Managing Directors of the Royal Dutch/Shell Group of Companies. He has been a managing director of Shell Transport and a Group managing director since 1991.

His functional and geographical responsibilities as a Group managing director are Finance, Legal, Human Resources & Organisation, the USA and Canada.

Mark Moody-Stuart's whole working life has been with the Group, largely in countries outside Europe. After early practical experience in Spain, Oman, Brunei and Australia he led Shell UK's teams exploring for oil and gas in the North Sea in the mid-1970s. He then moved into more general management, working in Asia, Africa, and Europe. As the senior Shell manager in Turkey and then in Malaysia, he was involved in developing Shell businesses in those countries, working with national governments to initiate a number of major projects. In 1990 he returned to Europe to become coordinator of Shell exploration and production operations outside North America in The Hague.

Mark Moody-Stuart was born in 1940 in Antigua, West Indies. He holds a doctorate in Geology from Cambridge University. He is married, with four children: three sons, one born in The Netherlands and two in Brunei, and a daughter born in Australia. The family is enthusiastic about sailing.

Sir Mark Moody-Stuart became a Knight Commander of the Order of St Michael and St George in June 2000.

“Hydrogen storage technologies are however much further behind.”

valuable input from a cross section of different people and different societies. Understanding and knowledge builds both acceptance and, very likely, valuable contributions.

The alternative - relatively secret development and a sudden introduction of a poorly understood technology - could lead to long-term problems. Remember when nuclear fission was going to solve all problems, when it was going to be too cheap to meter? Those involved thought everyone would think the same way they did about the risks involved. We all know the result and I don't think any of us want to see the same sort of mistakes repeated.

I would suggest that we have to start preparing the ground now - even before we are sure about how the technology is going to develop. We have to create a dialogue on all aspects - safety, risk and waste disposal in all parts of the hydrogen energy chain. This process will have to be broad-based, open and transparent. The costs, in terms of time and effort, are considerable. But the potential costs of market rejection are even higher.

This dialogue will provide valuable input to the continuing discussion about which is the most appropriate technology path to emphasise.

Two Key Technologies

There are two technologies that are crucial to the way in which hydrogen could be introduced into energy markets. One is the fuel cell and the second is hydrogen storage. Fuel cell developments have moved very quickly over the past half decade - to the point where we can expect commercial introduction in the coming five years. Hydrogen storage technologies are however much further behind. If this lag remains, which at the moment appears likely, it could prove to be a significant factor in determining how hydrogen is introduced.

This is because storage and transportation technologies - or the lack of them - will be an important factor in determining where in the energy chain conversion is most appropriate and most economical.

Given the technological 'state of play' at the moment, there are two major transition paths we in Shell now view as arguable alternatives: one path based on completely new, carbon-free energy sources and the other path based on existing, mostly fossil fuel, infrastructure.

Carbon Free

Let's begin with the completely carbon free path - based on a new renewables infrastructure. Electrolysis using solar or wind-generated power is one of the most commonly cited models. The obvious, very attractive, feature is zero emissions and understandably, it is the NGO favourite.

Solar or wind power - perhaps in remote locations - would be used to create hydrogen, which would then be piped to consumption points. The main obstacle to this model is economic; it costs massive amounts of money. First the solar and wind installations have to be built. Then the energy they create, at relatively high cost, has to be converted into hydrogen - a further cost. Then a massive infrastructure, of pipes, storage and distribution points has to be created - again at significant cost, perhaps hundreds of billions of dollars.

Who would make such major upfront investments in a risky new technology? While wind is approaching competitive per unit cost, solar is still some way off. It is likely to take some decades before these costs come down to the point where use of wind or solar to produce hydrogen would be truly competitive. It would also take considerable time before the hydrogen market develops sufficiently to justify such investments.

Of course, this process would be significantly sped up if the environmental impact of other energy sources was effectively costed. In the longer term, this is clearly the best possible energy system - completely emission free and environmentally benign. The question is how to get there.

Nuclear electrolysis - using surplus off peak supplies - is another emissions free route and has the advantage that the hydrogen could be generated at, or near, the point of consumption. This would be economically more feasible -

If hydrogen is successfully introduced into energy markets we can expect a wide range of benefits. - including more cost efficient transportation and a decrease in CO₂ emissions in the industrialised world. Furthermore we may be able to mitigate - in a significant way - the enormous increase in greenhouse gas emissions which development in the newly industrialised countries will otherwise almost inevitably create. The remaining technical challenges, including refinement of fuel cells and the development of a usable storage technology, are still considerable. Just as important are the economic and commercial considerations. The way in which hydrogen technologies are introduced into markets may be decisive in determining their success or failure. Governments should allow industry the freedom to experiment and innovate and not try to determine the precise technology to be used.

I am delighted to be here with you today because I have, for quite some time, taken a personal interest in the development of hydrogen energy technologies. I find current developments in this field truly exciting; we may be part of the creation of a significant new industry, a great new business that will be able to deliver even cleaner and cheaper energy.

If hydrogen can be introduced into energy markets we can reasonably hope to see a broad variety of benefits - including more cost efficient transportation and a decrease in CO₂ emissions in the industrialised world. Furthermore we may be able to mitigate - in a significant way - the enormous increase in greenhouse gas emissions which development in the newly industrialised countries will otherwise almost inevitably create.

On-board fuel cells could be powering cars, trucks and, who knows, even heavier vehicles such as trains and ships within decades. Stationary fuel cells could be efficiently and cleanly powering homes and businesses - transforming the structure of the current power industry.

Many Challenges

The prospects are fascinating. But, so are the technical, economic and commercial difficulties.

We are still a long way from the necessary technologies and we haven't even really begun to systematically consider all the problems associated with introducing a new technology rapidly

into mass markets. There is an ongoing discussion about which technological path to take - which I will outline and discuss. There are clear differences of opinion in this field - about which path will deliver the most benefits in the fastest way - but a commonly accepted aim. All of us want, if possible, to quickly introduce hydrogen technologies, and reap their benefits, environmental and financial.

Addressing Risks

Unfortunately there has been much less discussion about the very real ways in which the whole process could go wrong. If there is one thing that events of the last decade have taught us, it is that public acceptance can never be taken for granted.

At the moment we are only hearing the positive messages about these technologies. But, I don't think I need to remind anyone that the time when scientists could come out of their labs and say: "I've got a great new technology for you" is long gone.

The popular perceptions of the risks involved in hydrogen technologies will have to be measured and addressed. A dialogue with all interested groups - everyone from national governments, to NGOs and customers themselves - will have to be stimulated and maintained. This is vital part of the process of introducing a new technology and it is an area in which co-operation is essential.

We should not view this as a barrier to be overcome, but as a way of involving more people and gaining

"Popular perceptions of the risks involved in hydrogen technologies will have to be measured and addressed."

moving forward. However we know that there are some who disagree and we welcome continuing discussion.

The debate is really about how technological change is most efficiently introduced into markets. It used to be thought that top-down imposition of technologies was the most efficient way. Put it in place and the market will develop - appear out of nowhere. That sort of thinking has much appeal - especially to engineers and scientists.

However, it isn't how markets in the real world work. Back in the late 70s most engineers would have dismissed personal computers as insignificant toys. They were focussed on building multi-million dollar supercomputers and main frames - massively expensive infrastructure. They were wrong because they didn't realise that PCs would meet market needs and unleash enormous demand. That has led to rapid innovation, which is transforming the world.

Something similar could happen with hydrogen - as long as we make the path forward affordable and attractive to consumers.

That would then lead to innovation, including the development of viable storage solutions. The expanding market would demand the construction of a hydrogen infrastructure based on distributed generation at retail forecourts.

Opponents of this approach - which has been dubbed fossil infrastructure piggybacking - argue that the environmental benefits they envisage from an emissions free system will be watered down. Their focus is particularly on the shorter-term CO2 emission reduction benefits. Compared to the ultimate benefits to be expected from a renewable hydrogen vehicle that is true. One cannot argue with that.

Fastest, Most Effective

I can only repeat that I believe the transition process I have outlined today is the fastest and most effective way of reaching the common ultimate goal - and doing so in an economic way, using the power of the market.

The transition does not have to be slow. Indeed, if the right market drivers

are identified, it could be a very rapid one - over just a few decades. For the energy system this would be remarkably fast.

During this transition it is likely that the transformation to hydrogen would be progressively driven back up the hydrocarbon chain toward the original source - becoming increasingly cleaner in terms of CO2 emissions. This process would provide growing incentives for renewables projects.

However we should not forget that there is another way of solving that particular problem: CO2 emissions from fossil fuels can be extracted and sequestered.

Economic, Market

The key point to remember here is that, in considering which path hydrogen will take into energy markets, economic and commercial considerations are at least as important as technical.

Many customers will pay a premium for environmentally clean products. But they also demand high standards in all other areas. They are not going to put up with anything that doesn't work or is inconvenient. It is in no-one's interest to produce inferior products - which could slow or even halt the process. Having said that, it is clear that a number of technologies are moving along very quickly and these could alter the outlook suddenly and dramatically.

Some companies have suggested the use of other transition fuels such as onboard methanol to hydrogen conversion. Such fuels would require significant infrastructure investments, which would be difficult to justify for what could be short-lived solutions. Health, safety and environmental impacts of such fuels would also need to be considered. As mentioned, at the moment we think that, for the transition period, gasoline to hydrogen is the way to go.

However, we don't take this as a given. We are open on this as on other issues. If a better solution is proposed we will certainly consider it. We regard this as a learning process and we are more than willing to throw out our mental maps if new developments come along.

"The key point to remember here is that, in considering which path hydrogen will take into energy markets, economic and commercial considerations are at least as important as technical."

currently - than large-scale solar or wind hydrogen. However there are the ever-present safety and waste disposal questions and the consequent decline in political acceptability of such plants. This problem is well-understood and unlikely to go away in the short term.

There are, of course, many ways of improving the underlying economics. Transporting some hydrogen mixed with natural gas, piggybacking on the present natural gas infrastructure, could be an interim step, a way of cutting up-front costs.

That is considered to be technically feasible for up to some 8 per cent of the natural gas flow. That could deliver enough hydrogen to make some impact on electricity markets, but would not make a significant impact on transportation markets.

Fossil synthesis

Given these obstacles, another path - or more accurately set of paths - appears more feasible. Under these models - which we call advanced fossil synthesis - hydrogen technologies piggyback on existing fuel infrastructures in order to build up enough momentum to generate self-sustaining growth.

In the fossil fuel industry we long ago learned that just having a resource is only part of the battle. Refining and delivering the resource, in usable form, to functioning markets is the process that adds much of the value. As I think I have already made clear, in order to become a major part of the energy system, hydrogen technologies will have to attract massive investment - far more than we see at present.

In essence, the introduction path that is most likely to win through in the short term is the one that is the most economic, flexible - and the least risky. That route involves less exposure for the investors and also creates the opportunity to learn, innovate and adapt as the inevitable new advances are made.

We can already convert fossil fuels to usable hydrogen with existing technologies far cheaper than the solar and nuclear models I have described. Furthermore, and critically, a delivery

Given the difficulties in transporting and storing hydrogen, and present technological trends, this means conversion into hydrogen must take place as close to the point of consumption as possible. This leads us to vehicles with on-board conversion to hydrogen or, alternatively, conversion adjacent to the delivery point - the retail site.

Such a system would maximise use of present infrastructure, minimising introduction costs and speeding the overall transition. It would be the path most likely to succeed in creating rapid demand growth for hydrogen technologies, in particular fuel cells. Scale economies in the manufacture of fuel cells, conversion units and the vehicles themselves could be achieved more rapidly, driving down costs. This would reduce risk for investors and create a technological momentum - leading to more innovations and rapidly growing efficiencies.

Storage Technologies

Technological advances in storage technologies will be the decisive element in deciding whether on-board, or stationary, conversion becomes the preferred model.

On-board storage, particularly in relatively small passenger vehicles, is still a major technical and economic challenge. In Shell we are actively working on new storage technologies and we believe attractive, safe and economical hydrogen vehicles will become a reality in the near future.

However in the intervening period we are confronted with a quandary. How can we deliver energy to a fuel cell vehicle without a hydrogen delivery infrastructure or an efficient on-board storage system? In Shell we believe the way forward is through on-board conversion of gasoline to hydrogen - through a technology we call catalytic partial oxidation, CPO.

We strongly believe that this is, in reality, the fastest and most economical way to achieve widespread introduction of hydrogen technologies. Because of that, we also believe that this is the most environmentally acceptable way of

“Having a resource is only part of the battle. Refining and delivering the resource, in usable form, to functioning markets is the process that adds much of the value.”

infrastructure issues are still the major technological and economic barriers.

The famous carbon nanotubes would be a wonderful solution - if the science could ever be proved. Then we could move toward the fuel in a box model - produced right back up the chain near the original energy source. If light enough, it could then be transported as a cartridge, which could be easily inserted into any type of vehicle. Alternatively it could be used in a home or business power system.

Open Approach

We are keeping an open mind on all of these issues and closely monitoring all innovations and new developments.

The process is exciting and we are very pleased to be able to play a role in it. People from industry, from governments, from universities and NGOs are all working together with a common aim. As I have described there are differences as to how to proceed but these are mostly creative disagreements rather than confrontations.

We earnestly hope that we can continue to work together in this way. It is wonderful to be part of this: the development of more sustainable energy and mobility solutions.

However there are ways in which this process can go badly wrong. First of all, politically driven technology choices may be made. Technology choice by politicians

has a very sorry history. Tens of billions of dollars have been poured into projects - such as Concorde, Minitel, HDTV and Super Phoenix - which have not created meaningful economic technologies.

We would not like to see such mistakes repeated. There is a legitimate political interest in cleaning up the environment and limiting CO2 emissions - which we share.

Targets should be set and then industry should be allowed to get on with experimenting and developing different technologies. Provided the freedom to experiment is maintained, and conditions favourable to the introduction of more environmentally friendly products are created, customers will make the right choice. That is the way to make rapid progress and to introduce hydrogen technologies - through a broad market focus, guided, but not controlled, by benign government regulation. Provided the freedom to experiment is maintained, and conditions favourable to the introduction of more environmentally friendly products are created, customers will make the right choice.

That is the way to make rapid progress and to introduce hydrogen technologies - through a broad market focus, guided, but not controlled, by benign government regulation.

“Targets should be set and then industry should be allowed to get on with experimenting and developing different technologies.”

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The Importance of the Kyoto Mechanisms for Sustainable Development and Business

Mark Moody-Stuart

Chairman of the Committee of Managing Directors of
The Royal Dutch/Shell Group of Companies

Ministerial Forum on the Kyoto Mechanisms, Ottawa, Canada
8 Oct. 1999



Mark Moody-Stuart was appointed Chairman of The "Shell" Transport and Trading Company in 1997, after having served six years as both managing director of Shell Transport and managing director of the Royal Dutch/Shell Group of Companies. In 1998 he assumed the chairmanship of the Group's Committee of Managing Directors. As a Group managing director, his spheres of interest currently are: Oil Products; Human Resources & Organisation; Legal; Shell Oil and Shell Canada.

Mark Moody-Stuart's whole working life has been with the Group, largely in countries outside Europe. Early practical experience gained in Spain, Oman, Brunei and Australia was, in 1976, focused onto the major challenge of leading Shell UK's teams in exploring the North Sea. Thereafter, he left exploration for more general management, working in Africa, Europe and Asia. As the Group's most senior manager, first in Turkey and then in Malaysia, he was involved in developing all of the Group's business in those countries, working with national governments to initiate a number of major projects. In 1990 he returned to Europe, to The Hague, to take up the position of co-ordinator of the Group's exploration and production operations outside North America.

Mark Moody-Stuart was born in 1940 in Antigua, West Indies. He holds a doctorate in Geology from Cambridge University. He is married, with four children: three sons, one born in The Netherlands and two in Brunei, and a daughter born in Australia. The family is enthusiastic about sailing.

The Shell Group is already cutting its own emissions of greenhouse gases. It supports the Kyoto Protocol that is aimed at stabilising man-made emissions. Shell believes that, if the Kyoto mechanisms are to function efficiently, workable guidelines that encourage private investment will be required. In moving forward, we must ensure that we don't let the perfect be the enemy of the good.

This conference is important because the scale of the challenges posed by climate change and Kyoto demand political will and commitment. It is a demonstration that the commitment and will do exist. Today I'd like to take you through the work of the Royal Dutch/Shell Group, offering our experience as an example of what can be done and also of what challenges need to be faced. Shell is committed to contributing to sustainable development – for good business and social reasons – and to cutting emissions. The Kyoto mechanisms embody the principles of sustainable development and we embrace them.

Shell supported the Kyoto process, has taken its decisions on board and is already working on the ground toward its goals.

We are – in terms of business – an early mover on this issue. I'd like to describe our programme for you – the approaches we are taking and the lessons we have learned to date. Having done that I'd like to share with you a few ideas on ways we can help each other move forward.

All of us want to tackle this problem. I believe very strongly that, to make a real difference, business has to be brought on board – and its strengths used. Business, if encouraged properly, can provide the underlying drive for the campaign to decrease emissions.

A quick summary of Shell – it is a global group of companies – active in 140 countries and on all continents except Antarctica. The core businesses are the search for, and the development of, oil and gas, the transportation, refining and delivery of those products, chemicals, downstream gas and power and – importantly – renewable energies.

In 1996 we took the global warming message on board – publicly recognising the problem, supporting the precautionary principle – the convention on climate change and the Kyoto Protocol.

In October last year we published our commitment (*Fig. 1*) to take action on climate change. The key elements are to reduce our own emissions – exceeding the Kyoto targets – breaking the link between business growth and emissions. We are working with our customers to reduce their emissions. Shell has been in the energy business more than a century – since the 1890s – and we know that projects take 20 to 30 years to play out. So, to effect real change in emissions, it is going to take decades. We are designing our programmes to be long term, sustainable.

For the energy industry, the central message to take on board is that carbon emissions should no longer be viewed as free. They are clearly a potential cost and they have to be accounted for as such. They have to be measured, quantified and valued. So that is the central point of our compass (*Fig. 2*) – to introduce a realistic costing of carbon into all business practices. That will have important ramifications for aspects of virtually all of our businesses.

Any credible response to climate change – especially that of an energy company – must start with real cuts in our own greenhouse gas emissions. Shell has thus committed itself to delivering – by 2002 – a reduction in emissions from our operations by 10% over their 1990 levels. We are achieving this by increasing energy efficiency as well as eliminating continuous disposal of gas by venting – by 2003 – and continuous flaring – by 2008.

How much progress have we made in the first 12 months? Here is our

“Shell supported the Kyoto process, has taken its decisions on board and is already working on the ground toward its goals.”

performance - and what we hope to achieve. (Fig. 3) We are 5% ahead of target, five years ahead of the first accounting period. I'm not boasting. I think it is just an indication of what can be achieved.

The point is that we are making progress - not just real decreases in the emissions produced per unit of energy produced but real decreases in absolute emissions. Most of this is being achieved through tighter controls on venting and flaring of associated gas - particularly in places such as Nigeria. But significant improvements are also coming from other areas - such as refining.

A major part our commitment is to help our customers reduce their emissions. This is being tackled in three main ways - by increasing the availability of fuels with a lower carbon content, such as Natural Gas for heating and power and LPG for cars;

Secondly, through offering renewable energy choices, and,

Finally, through work on new innovative technologies such as hydrogen.

I assume everyone here is familiar with the underlying pattern of decarbonisation. (Fig. 4) For those who are not - it is conceptually straightforward. As we have moved from wood and coal to oil and then gas we have been producing less carbon for each unit of energy consumed. So, as part of Shell's reduction efforts, we are moving our fuel slate along that decarbonisation evolution - away from dirtier carbon intensive fuels to cleaner fuels such as gas.

Hand in hand with this trend there has been an improved performance of the carbon intensive fuels. This is driven by customer needs. The demand for increased utility and improved mobility is the primary driver toward higher performing, lower carbon fuels. Whatever is wrought by Kyoto, meeting customers needs will remain our primary motivator. It will also constrain - or facilitate - action at a political level.

Shell's strategy is to deliver the energy services consumers want in a cleaner way.

We believe that goals should be set but the choice of technologies left open to the market. New discoveries, new technologies are being announced virtually weekly. The whole system is evolving as technologies and innovations are made. In this uncertainty to be prescriptive about technologies is foolhardy.

Let business experiment - and let the customers decide.

Driven by our customer's need for cleaner burning fuels we are building up our gas businesses at every opportunity. We are increasing volumes and developing new markets. We believe this is sound environmentally as gas produces less than half the amount of CO₂ per unit of electricity generated compared with coal. It is also sound from a business point of view. If carbon emissions are to be a cost in the coming years - lower emission fuels such as gas, should enjoy an advantage.

This slide (Fig. 5) shows individual projects. It is a worldwide push.

In the longer run effective control of man-made emissions in a world in which energy demand is rising, can only be achieved through the use of non-carbon fuels. So, we have set up Shell International Renewables. We are investing half a billion dollars over five years in solar cells, biomass and wind power. When fully operational our German solar cell factory will be the largest in the world. Moreover we are investing in alternative fuel technologies such as hydrogen.

Hydrogen has possible transport applications and industrial uses. In Germany we have opened - what we believe to be - the world's first hydrogen filling station. It is near Hamburg and it provides fuel for experimental vehicles.

In Iceland we have invested in a project that aims to create the world's first hydrogen economy. We are also working with Daimler Chrysler and Norsk Hydro on different hydrogen fuel cell applications.

Our aim is to integrate sustainable development and environmental concerns

*"Let business
experiment - and let
the customers decide."*

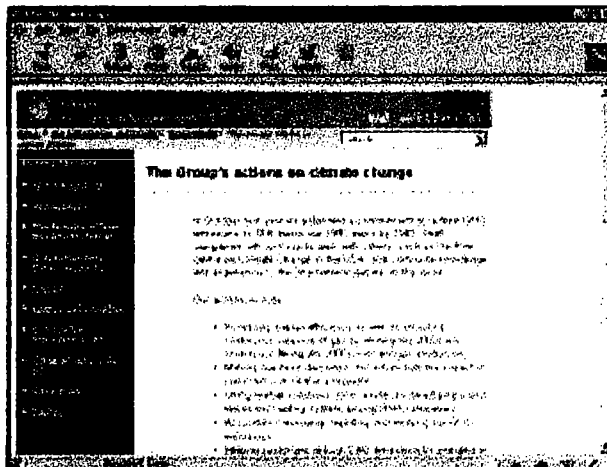


Figure 1: Commitment

Climate Change Action Program A Compass for the Group

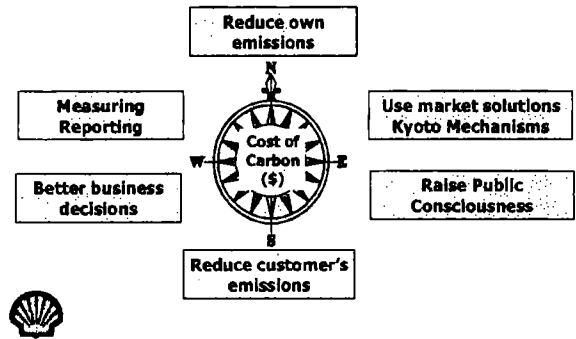


Figure 2: A compass for the Group

Shell GHG emissions

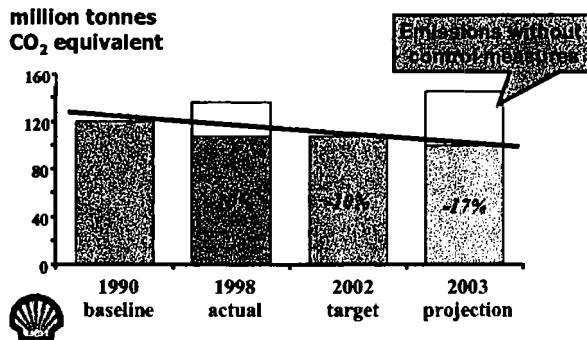


Figure 3: Shell GHG emissions

Decarbonisation – An Evolution

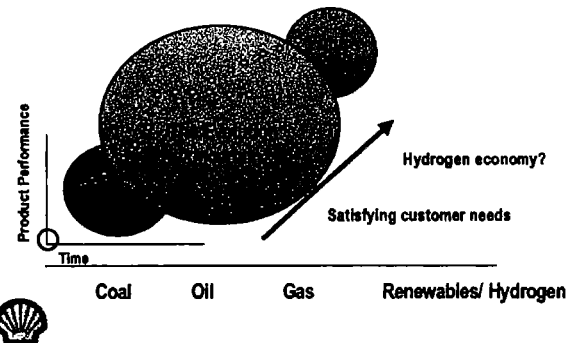


Figure 4: Decarbonisation

Shell Gas initiatives

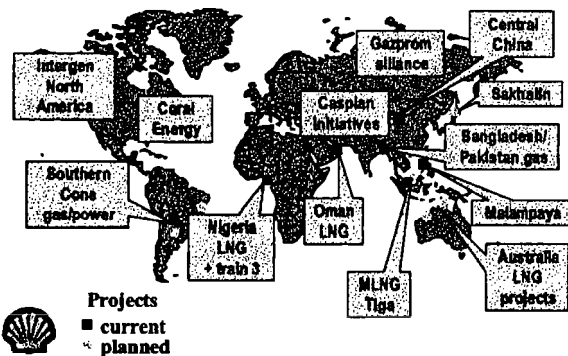


Figure 5: Shell Gas initiatives

Making Carbon a Normal Business Cost

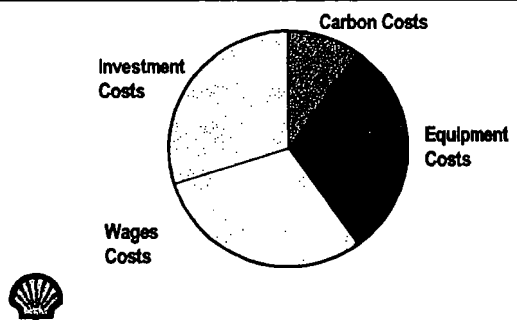


Figure 6: Making carbon cost normal

- including emissions reduction targets - into our core business decision-making processes. That means taking future carbon costs into account, measuring and reporting our actual performance and engaging actively in the public debate - which we are doing through a large number of organisations such as the World Business Council for Sustainable Development. We are also helping to set up the International Emissions Trading Association. The body is aimed at promoting flexible mechanisms to a broad range of business people in OECD - and non-OECD - countries.

The most important decisions made in company boardrooms are on **where** and **how** to invest. Which projects are going to get the money? To build emissions reduction into this key process, carbon has to be a cost element, an investment consideration. (Fig. 6)

In reality, there is no price - as yet. So, at the moment, we are applying a system we call 'carbon shadow pricing'. Applied as a cost - or a benefit - to a project carbon pricing will affect the ranking of our investment options. Any project that comes to the Shell board with emissions above 100,000 tonnes of carbon per annum must carry a sensitivity for a variety of carbon cost levels - 5, 20 and 40 dollars per tonne. This allows us to 'weight' each project. Heavy carbon emissions drive up the notional cost and therefore make a project less attractive. We have already applied this system to 5 significant investment projects. However, these are early days and we are on a learning curve.

Shadow numbers, by definition, are artificial. We have to develop a better understanding of what it really costs to take each tonne out of our emissions. To reveal this we are piloting, between Shell companies, a carbon emissions trading system - which I will explain shortly. But, first I'll describe how this affects project planning and development.

Here in Canada we have an oil sands project near Fort McMurray, Alberta. This

is an energy - and therefore carbon - intensive project that Shell Canada and its partners are actively developing for a variety of good reasons. First of all, there is a compelling economic case for Canada, for Alberta and for Shell Canada. Secondly, there are considerable benefits for the indigenous people of the area. Furthermore, Shell can undertake it - and still deliver the emissions decreases I have described.

In developing it to this point a number of techniques have been used that have already resulted in planned emissions being cut from the - government approved design by one third. Carbon pricing has been applied in planning, as has full cycle analysis. We have considered the full cycle impact of the project and tested the project for a theoretical future cost of carbon.

Mobilising the immense resources and ingenuity of business is, we believe, the best way of combating emissions. It may be, in reality, the only way.

Shell is trying to implement two of the market mechanisms set up under the Kyoto protocol: emissions trading, and the Clean Development Mechanism. We believe it essential to ensure that each of these mechanisms is structured in such a way as to attract private capital. It is crucial to make people - and companies - **want** to do these things. Forcing them, through laws, may work, but the efficiency attained would be nothing like that achieved through a market-based system. To be acceptable, reduction must be cost efficient. Otherwise it stands no chance.

So, how can efficiency be 'designed-in' - as it were - to the processes? As I mentioned, to find out we have set up a pilot internal trading system, which is due to get going on the first of January next.

We believe this is the best way for Shell companies to reduce their long-term GHG emissions cost efficiently and also to gain experience in building the cost of carbon into their operations.

So far we have got buy-in from a significant number of our operations in Annex 1 countries. (Fig. 7) When the

"We have to develop a better understanding of what it really costs to take each tonne out of our emissions."

system starts it should cover 33 per cent of total Group emissions - 35 million tons – or put another way half of those from annex one countries.

Why stress buy-in? Why not just order compliance? First of all because that is not the way Shell works. Secondly, and perhaps even more importantly, it is critically important to get *real* commitment at all levels. Changing peoples' attitudes in the company is critical to success – a challenge that should not be underestimated.

If business managers see the carbon cost - not as a threat but as a normal part of business, then we have come a long way. If they see them as business opportunities, we have gone much, much further.

There is going to be a steep learning curve on this one - and I don't want to pre-empt the process with any snap judgements. But, I can say that, there is already a clear need to validate this currency. There are already small functioning markets - for both permits and offsets - but there is no clear way of judging values, of authenticating the currency. There is no Bank of England - or Fed - behind it. Anyone can set up a market - in virtually no time at all. What we need is a process - national and international - under which we know what we are buying. Then we can get on with the job. So, I think there is a clear need to create the right policies to encourage emissions trading as quickly as possible.

Equally important is a push for the Clean Development Mechanism.

Shell companies are seeking to identify CDM demonstration projects in non-annex one countries for investment. These must meet sustainable development objectives, contribute to environmental improvement and utilise private capital.

A good example (*Fig. 8*) of what we are trying to achieve is a commercial, solar-powered rural electrification scheme we have set up in South Africa's Eastern Cape. It is the largest of its type ever attempted - anywhere. We hope it will reach about 50,000 homes within three years.

The system - including payment arrangements - has been designed to make it as easy as possible for people to take advantage of the service.

It has three parts: a solar panel, a charge-controlled battery and a security and metering unit. Families pay 8 dollars and a smart card allows them to use as much power as they want – for a month. They used to spend about 8 dollars a month on kerosene and candles. Now they get access to clean power for the same amount.

If this project works commercially - in the long term - it holds tremendous potential. There are about one billion people in the world who could benefit.

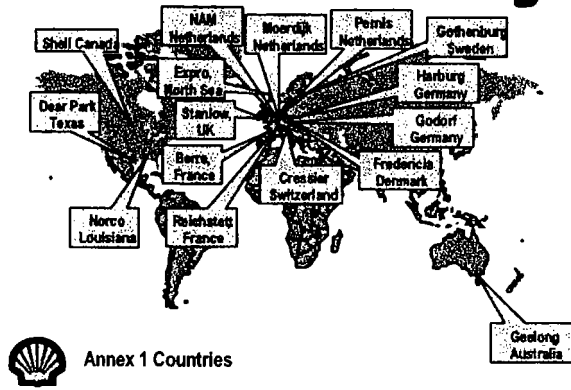
The fee for service innovation allows more people to take part – it allows us to move down the triangle. We believe that CDM credits will work in a similar way, expanding the percentage of customers who can benefit. This will attract investment – as there will be more customers – and reduce the need for subsidies. The South African project is just one of 21 (*Fig. 9*) we have identified within Shell. Eight have been chosen for priority development and/or expansion. The diversity of the projects - submitted by our own companies - has come as something of a surprise. I think this shows the benefits of promoting awareness and engagement – people are committed. They want to contribute and the projects are diverse in terms of technology, geography and size.

We are just beginning and we accept that we have much to learn in working with the mechanisms. So our approach is to offer these 8 projects as a demonstration of how the CDM may work. We want to stimulate a learning process so we are going to post the results on the web site of a virtual university being set up by the World Business Council for Sustainable Development Foundation. We hope this will create a dialogue that will lead to further improvements.

Since CDM begins next year the immediate policy need is for workable

"If business managers see the carbon cost - not as a threat but as a normal part of business, then we have come a long way."

Emissions Trading



Annex 1 Countries

Figure 7: Emissions trading

CDM: A PV example

Cash sales

Scheduled loans

Fee for Service

Near Commercial

Subsidies

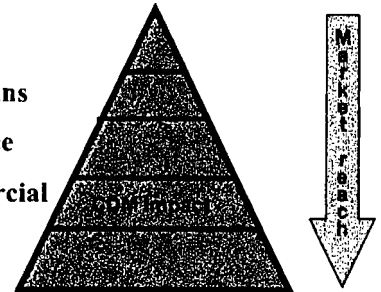
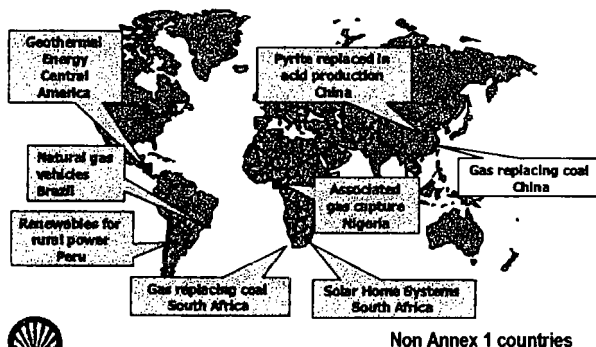


Figure 8: CDM – a PV example

Candidate CDM Projects



Non Annex 1 countries

Figure 9: Candidate CDM projects

Let's Make CDM Work

• Workable Guidelines

- Clear Methodologies

• Encourage Private Capital

- Simple Rules
- Transparency
- Efficient processes

• Carbon Markets in Annex 1 Countries



Figure 10: Let's make CDM work

Realities and Responsibilities

- Sustainable development and climate stabilisation are everyone's responsibility
- We all face the same energy, commercial and policy realities
- IF policies mobilise, not restrict, market forces business will create, innovate and invest
- Shell embraces this challenge and will deliver



Figure 11: Realities and responsibilities

guidelines. Give us the right guidelines – rules designed to attract investment – and industry will get on with the job. (Fig. 10) Clear baselines and methods of measurement will have to be established – and the nature and value of the credits will have to be spelled out.

To encourage the maximum possible investment, rules must be kept simple and transparent, as should verification systems. No-one wants more bureaucratic red tape.

Simple rules will keep transaction costs down,

transparency will build trust and acceptability, and

efficient certification and verification – preferably through an audit type system – will build credibility.

Provide good, workable guidelines and the money will flow in. Then a lot can be achieved in a short time. But if a commercially sound framework isn't put in place, the CDM risks being still borne.

Let's not forget that carbon markets in annex one countries must exist for the full potential of CDM to be realised.

It is early days yet but I think it is important to share what we have learnt so far. (Fig. 11) In this process there are some realities all of us – because we are all in this together – are going to have to face.

First: there are **energy realities**. Energy demand is growing – and is very likely to continue to grow. There is no realistic way of changing that. The needs of our customers and your constituents will be the principle driver for the energy market in the future. Solutions to environmental problems will need to be found that satisfy their needs for energy and mobility – otherwise they won't work.

So, we have to grow our way out of the problem – taking rising demand into account.

Secondly, there are **commercial realities**: no one is going to invest in projects that don't make sense. However, and this is critical, those commercial realities are, to a very large extent, formed by the regulatory framework. Whether there are thousands of CDM projects or only a handful rests on whether you can deliver business friendly rules.

That is the third reality – the **policy framework** – your area. We believe that, if the policies are right, business can make a truly earth changing contribution. We live in a time of rapid technological change – new inventions are in the news every day.

If policies take the uncertainty this creates into account – setting targets and not laying down which technology to use ... If they encourage innovation – leaving room for both success and failure ... and, If they are designed to mobilise – not restrict – market forces, we can together make a difference.

There is a very real danger that we will allow the **perfect** to be the enemy of the good. We mustn't allow that. Business can deliver creative solutions to these seemingly intractable problems. Shell has made a clear commitment to Kyoto and we will deliver on it.

“To encourage the maximum possible investment, rules must be kept simple and transparent, as should verification systems.”

Recent speeches by Group managing directors and other senior executives

Lessons From The Asian Financial Crisis

Maarten van den Bergh



Deep water – a global perspective

Linda Cook



Change, continuity, choice and competition

- a Shell perspective on developing energy markets

Phil Watts



The Values of Sustainable Business in the Next Century

Mark Moody-Stuart



Sustainable Solutions Support Sustainable Business

Jeroen van der Veer



Partnership principles and progress

Clive Mather

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FOR IMMEDIATE USE: 22 SEPTEMBER 2000

FIRST MEETING FOR G8 RENEWABLE ENERGY TASKFORCE

The Task Force on Renewable Energy, established by the G8 Governments in their communiqué at the G8 Summit in Okinawa, Japan, met today for the first time in Rome.

The Task Force has been established to identify the main barriers to the use of renewable sources of energy, particularly in developing countries where 2 billion people do not have access to reliable sources of energy. The Task Force is charged with recommending practical actions which G8 Governments can take to help remove these barriers.

Dr Corrado Clini of the Italian Ministry for Environment and Sir Mark Moody-Stuart, Chairman of the Royal Dutch/Shell Group of Companies, have been appointed joint co-chairs of the Task Force.

Dr Clini said: "This initiative of the G8 Governments is a clear demonstration of their commitment to sustainable development and recognises the need to reduce global CO₂ emissions. The future of the world's environment, and the health of the future generations, will be influenced both by the development of sustainable energy sources and by the reduction of the consumption of fossil fuels.

"The 'new' renewable technologies, such as solar, wind, biomass, small hydro, geothermal and hydrogen generated by renewable energy, can meet a significant part of the future demand for primary energy in developing countries. We would also like to see a reduction in the unit costs of these technologies through their increased use in developed countries.

"The Task Force is charged with indicating the way to 'square the circle' of the environmental, social and economic sustainability of renewable energies."

Sir Mark said: "I am honoured to have been invited by G8 Governments to work with Dr Clini as co-chairman on this important project.

"Energy is a vital component of development and renewable energy can play a crucial role both through offering wider access to consumers who have no access to grid electricity, as well as encouraging overall energy supply in sustainable ways.

More

“If the use of renewable sources is to expand rapidly, they must be made commercial so that investment is attracted. I am delighted that G8 Governments and businesses can get together to see how this can be enabled most effectively. This has to be about renewables as an energy business rather than just a pious hope. “We are looking forward to working with members of the Task Force to bring forward clear and workable recommendations to the G8 Heads of Government.”

The Task Force will be seeking input and views from a wide range of stakeholders. An advisory group has been established which will operate and interact with the Task Force largely on a virtual basis. It is also expected that a number of outreach events will occur around the world for interested parties to provide input to the Task Force's deliberations, for example the Village Power event in Washington, the United States, which will be attended by energy experts and representatives from developing countries. In addition, a website will be launched shortly which will carry information on the initiative and its progress, and offers a further means of engaging in dialogue with the Task Force.

The co-chairs have engaged Michael Jefferson, formerly of the World Energy Council, and Gill Wilkins of ETSU (the Environmental Technologies Support Unit) an energy consultancy, to act as consultants for the Task Force.

The next meeting of the Task Force is scheduled for November 20 in The Hague, The Netherlands, to coincide with the COP 6 (Conference of the Parties) meetings.

The Task Force will present its recommendations to the G8 Heads of Governments at their Summit in Genoa next year.

Ends

ENQUIRIES:

Shell International Media Relations

Cerris Tavinor

+44 (0) 20 7934 3045

G8 RENEWABLE ENERGY TASK FORCE

Chairmen

Dr Corrado Clini
Sir Mark Moody-Stuart

Director General, Department of Environment, Italy
Royal Dutch/Shell Group

Vice-Chairman

Shigeru Oki

Director General, Renewable Energy Department, MITI, Japan

Rapporteur

Jean-Loup Martin

Fondation Energies pour le Monde

Members

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HE John Ashe

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Dr Pavel Bezrukikh

Head of Department of Science and Technology, Ministry of Energy, Russian Federation

Zhou Dadi
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Director, International Institute for Sustainable Development
GE Capital, SFG
Managing Director, Intelligent Power Systems
CEO, Egyptian General Petroleum Corporation
Managing Director, World Bank and Executive Vice President of the IFC

Further appointments, particularly in the area of private finance and micro-credit may follow.



Shaping the future of energy industries - an energy company perspective

Mark Moody-Stuart

Chairman, Royal Dutch/Shell Group

Offshore Northern Seas conference, Stavanger
August 22, 2000



Mark Moody-Stuart is Chairman of The "Shell" Transport and Trading Company and of the Committee of Managing Directors of the Royal Dutch/Shell Group of Companies. He has been a managing director of Shell Transport and a Group managing director since 1991.

His functional and geographical responsibilities as a Group managing director are Finance, Legal, Human Resources & Organisation, the USA and Canada.

Mark Moody-Stuart's whole working life has been with the Group, largely in countries outside Europe. After early practical experience in Spain, Oman, Brunei and Australia he led Shell UK's teams exploring for oil and gas in the North Sea in the mid-1970s. He then moved into more general management, working in Asia, Africa, and Europe. As the senior Shell manager in Turkey and then in Malaysia, he was involved in developing Shell businesses in those countries, working with national governments to initiate a number of major projects. In 1990 he returned to Europe to become coordinator of Shell exploration and production operations outside North America in The Hague.

Mark Moody-Stuart was born in 1940 in Antigua, West Indies. He holds a doctorate in Geology from Cambridge University. He is married, with four children: three sons, one born in The Netherlands and two in Brunei, and a daughter born in Australia. The family is enthusiastic about sailing.

Sir Mark Moody-Stuart became a Knight Commander of the Order of St Michael and St George in June 2000.

Solving the world's energy challenges depends on business responsiveness. Energy industries will evolve to meet changing needs and environmental concerns. The threat of climate change requires precautionary action, without jeopardising economic development. Technology is the key. Society has only begun to explore the technological possibilities for tackling greenhouse emissions. Shell has a strong commitment and distinctive approach to technology – harnessing experience, encouraging innovation, working with others, using commercial markets. All businesses face a business revolution which is transforming markets and unleashing competition – but also offering new possibilities. Shell is vigorously pursuing internet opportunities. Businesses must also meet increasingly demanding public expectations. Shell is committed to contributing to sustainable development – integrating economic, social and environmental considerations, balancing short and long-term priorities, engaging with society.

← Shell / US USP

There are very few things we can be sure about the future of energy industries. One is that they will be different. Energy industries have always evolved to meet people's changing needs. They will certainly continue doing so – probably more rapidly and fundamentally than we have been used to.

Where better to consider this future than in Stavanger – the centre of a forward- and outward-looking energy industry? An industry which has a particular commitment to two vital areas for the future – developing technology and pursuing environmental solutions.

Will energy companies continue to play a vital role in shaping this future? I think so. Of course, I'm biased. But there are good reasons for this belief.

Markets demand particular characteristics of commercial enterprises – responsiveness, organisation, creativity, a willingness to bear risks and competitive drive. These will be vital for shaping our future.

Responsiveness is key. Business success depends on responding to changing conditions, expectations and possibilities for improving performance and creating new value.

I will start by considering the challenge of meeting the world's expanding and shifting energy needs – in a way that is both economic and responds to the threat of climate change. I will argue that technology is the key to this – for making more effective use of our present resources and developing new ones. At

the same time a business revolution challenges us all, but also offers new possibilities. And, businesses must work to regain people's trust.

I will say something about how we are approaching these things in Shell.

Driving energy evolution

Modern energy systems have continually evolved – responding to the changing needs of customers. The challenges which will shape their future include:

- serving shifting patterns of demand,
- developing gas markets,
- extending depleting resources, and
- meeting environmental threats.

World energy demand grew by less than 1% a year during the 1990s. However, this amounted to some 750 million tonnes a year of additional demand – as much energy as China consumes.

Growth was affected by the dramatic collapse of demand in the former Soviet Union. Most of the additional consumption was in OECD countries, which grew by 1.4% a year.

The energy needs of developing countries increased much more rapidly for much of the decade – but then slowed as a result of the Asian crisis and, in particular, a sharp fall in Chinese consumption. This fall – which has continued since 1997 – came from a 25% cut in coal consumption, China's major form of energy. Demand for other forms of energy continued to grow strongly, as

“Business success depends on responding to changing conditions, expectations and possibilities for improving performance and creating new value.”

China's economy continued growing by more than 7% a year in real terms. (*figure 1, page 3*)

Overall the world consumed 6% less coal in 1999 than 10 years previously. OECD coal consumption was 3% lower. Oil consumption grew by 12%, slightly faster in the OECD. Global gas demand rose by 19% – 28% in the OECD – and nuclear by 30%. (*figure 2, page 3*)

What about the future?

Firstly, it is uncertain – as the experience of the last decade demonstrates. Energy demand is volatile, as are prices.

Secondly, the growth of energy consumption in the developed world may slow – as markets saturate and efficiency increases.

Thirdly, the energy needs of developing countries will grow strongly as they industrialise. But we should not neglect the possibilities for improving efficiency and leapfrogging technology.

Fourthly, energy supplies will change. We don't know if the fall in Chinese coal demand is permanent. But there is a clear – and understandable – global trend towards gas.

Nuclear has also been rising – as plant life has been extended – but faces increasing problems of cost and public acceptability.

In Shell, we have long seen a bright future for gas. We expect consumption to grow rapidly, particularly for power generation. Combined-cycle gas turbines have many competitive advantages – efficiency, flexibility, cost-effectiveness, safety, cleanliness, lower carbon emissions. The challenge is to deliver gas economically and to invest in developing markets. (*figure 3, page 3*)

We are extending our LNG leadership – and pursuing further opportunities for new plants and extensions. We are investing in new gas markets, such as Brazil, China and India – recently ordering two further LNG tankers to support this. (*figure 4, page 3*)

We are also pursuing innovative ways of serving customers in existing gas markets.

Gas and power markets are converging. We aim to exploit the link between them. Our InterGen power development joint venture has been very successful, and is being expanded. (*figure 5, page 3*)

Resource levels will certainly shape the future. We don't expect significant oil constraints until at least 2020 – because of this industry's continuing ability to extend existing resources and access new ones. (*figure 6, page 3*)

Less is known about the ultimate extent of gas resources. But I believe there is still much to find. History suggests a tendency to underestimate future production – and overestimate future prices. (*figure 7, page 5*)

Environmental concerns are another important shaping force.

Air quality is improving in developed countries. However, there are still major problems elsewhere. The World Bank suggests the health effects of coal use cost China 7% of GDP. (*figure 6, page 5*)

The fundamental threat, of course, is climate change. The rise in global temperatures appears to be accelerating. It is associated with increasing greenhouse emissions, to which the largest man-made contribution is from fossil fuels – which grew by nearly 60% in the 25 years from 1970. (*figure 9, page 5*)

The causal link is not certain and the future impact unclear. But precautionary action is imperative. This must be economic. It would be folly to jeopardise unnecessarily the economic development on which higher living standards depend. And I don't believe it is necessary.

Consider the recent sharp fall in Chinese coal demand. Allowing for increasing use of cleaner fuels, this amounts to a reduction the equivalent of nearly 3% of annual carbon dioxide emissions from the global energy system. As I said, we have no idea if the reduction will be sustained. However, it is an indication of the possibilities.

This shows the supreme importance of helping countries like China to increase energy efficiency and switch to

“The fundamental threat, of course, is climate change ... precautionary action is imperative.”

“It would be folly to jeopardise unnecessarily the economic development on which higher living standards depend. And I don't believe it is necessary.”

¹ See discussion of the issue of climate change on: <http://www.shell.com/climate/>

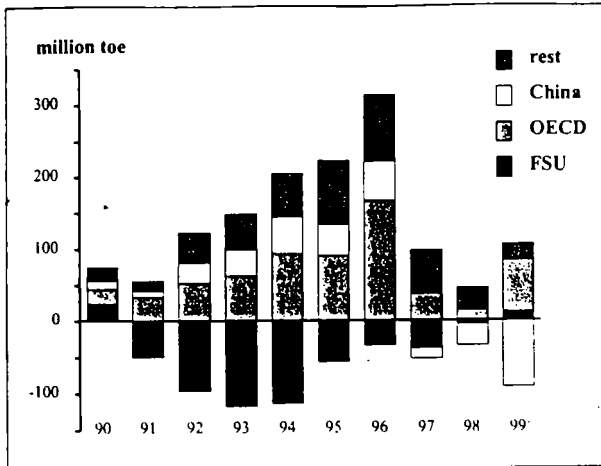


Figure 1: Incremental energy demand 1990-99

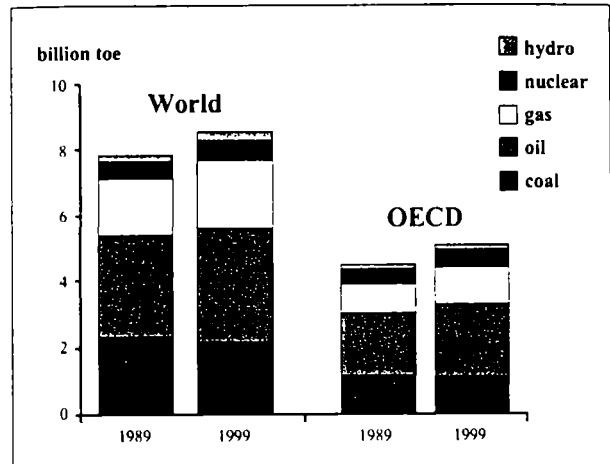


Figure 2: Energy supplies 1989-99

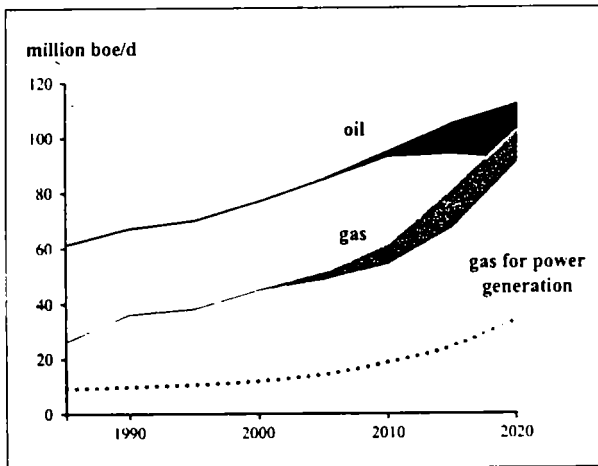


Figure 3: Shell scenarios – oil and gas consumption to 2020

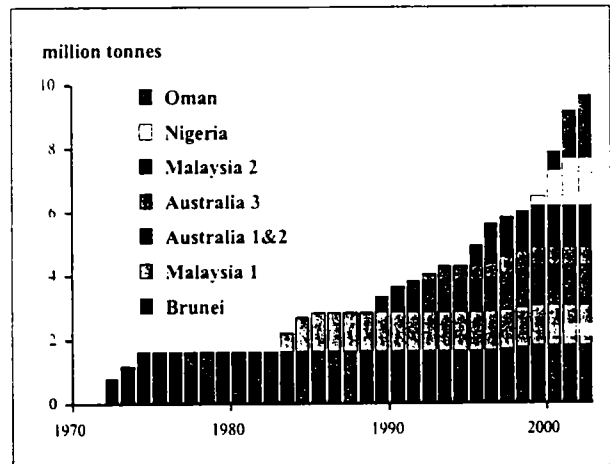


Figure 4: Shell LNG sales 1973-2004

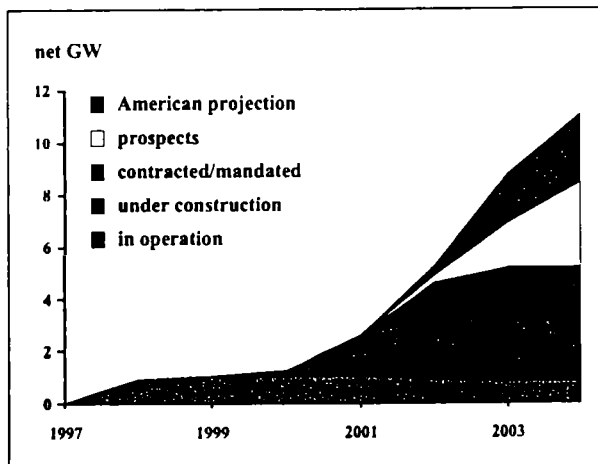


Figure 5: InterGen operations 1997-2004

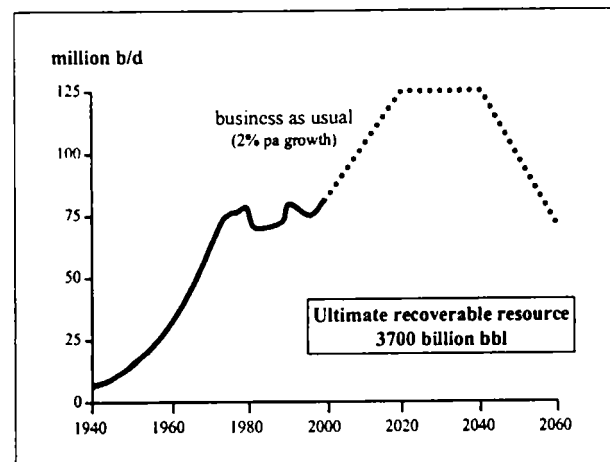


Figure 6: The oil mountain

cleaner fuels. We are working both to develop indigenous gas resources – for example in our joint venture with the China National Petroleum Company to supply gas from the Ordos Basin to customers in north-east China – and to deliver economic LNG.

The drive to reduce carbon dioxide emissions is already having a profound impact on the way governments and business think. In Shell we are committed to reducing our own emissions and to contributing to wider solutions. (figure 10, page 5)

Responding to these energy shifts will be a decisive challenge for energy companies. We see them as commercial opportunities.

Delivering solutions

Technological advance is the key – for solving energy challenges and realising their commercial possibilities.

In Shell we have a strong commitment to technology development – more so than some of our competitors. I think we also have a distinctive approach.

This has several elements:

- harnessing our unique reservoir of experience,
- using internal markets to encourage innovation,
- leveraging this internal capabilities by working with others, and
- using commercial markets to achieve industry-wide scale and delivery.

Shell is responsible for more oil and gas production than any other private company. We have the most experience of creating LNG ventures and of developing and operating deep-water reserves. (figures 11 & 12, page 5)

The business value of these positions is what we make of them. But they do offer a unique reservoir of experience which we are determined to exploit.

This means developing and maintaining the cadres of experts who embody shared experience – not just as data in a filing cabinet but in their ability to judge new possibilities.

The experience of six LNG schemes has enabled Shell designers to reduce

LNG unit capital and operating costs. The recently commissioned Oman LNG plant – with the biggest ever processing trains – has the lowest unit capital cost of any green-field development. (figure 13, page 7)

Seismic is another area where Shell companies can apply particular experience. Norske Shell recently used time-lapse seismic to track changes in the Draugen reservoir – enabling them to shift a planned well and gain what we believe is a world record well production of over 70,000 barrels a day.

We harness our experience systematically.

Shell E&P has developed an approach called *Realising the Limit*. This starts by understanding what is required to do each element of a task perfectly – with present technology – and then systematically harnesses our experience to pursue this perfection. The approach is being used to speed drilling, maximise the value of subsurface knowledge, make the best use of capital and increase production.

Using *Drilling the Limit*TM Shell companies around the world have been able to cut drilling times by more than a fifth on average. In the UK, they were halved. In the Gulf of Mexico deep water, we drilled twice as fast as our benchmarked competitors. Norske Shell has also achieved significant reductions in drilling times and well cost. (figures 14 & 15, page 7)

Experience also lets us focus on the technological solutions that matter.

A major problem in going into deeper water is how to prevent the great weight of the column of drilling fluids – from a rig perhaps two kilometres above – from damaging unstable formations. The Shell subsea pumping system provides a solution.

Another challenge is to extend drilling reach while retaining the well bore to allow the high productivity necessary for deep-water economics. Shell expandable tubulars – enlarged in situ – provide a solution.

Staying ahead requires more than just periodic advances. We need a constant flow of innovations – delivering new

“In Shell we are committed to reducing our own emissions and to contributing to wider solutions.”

US know-how

“Technological advance is the key – for solving energy challenges and realising their commercial possibilities.”

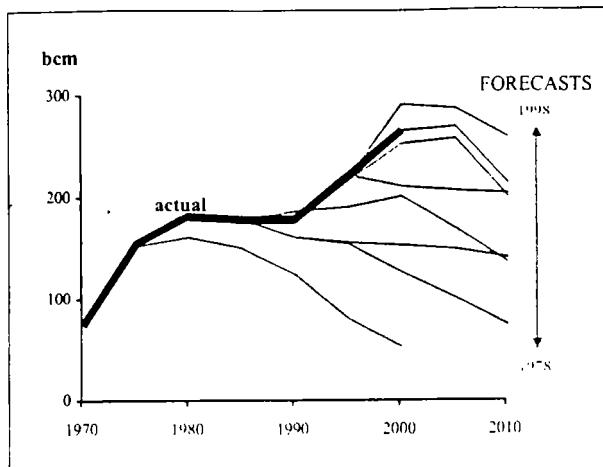


Figure 7: European gas production forecasts 1978-98

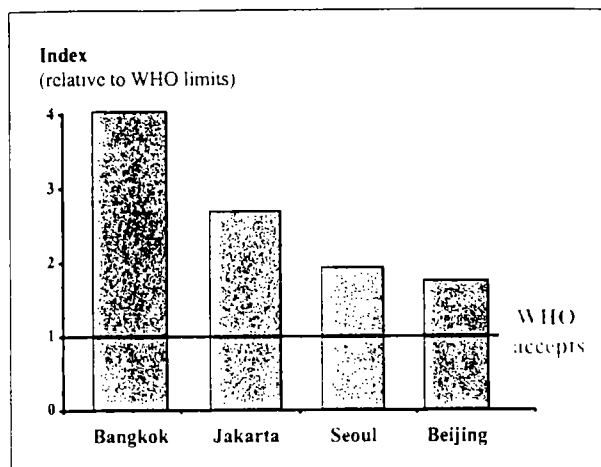


Figure 8: Asian urban air quality (early 1990s)

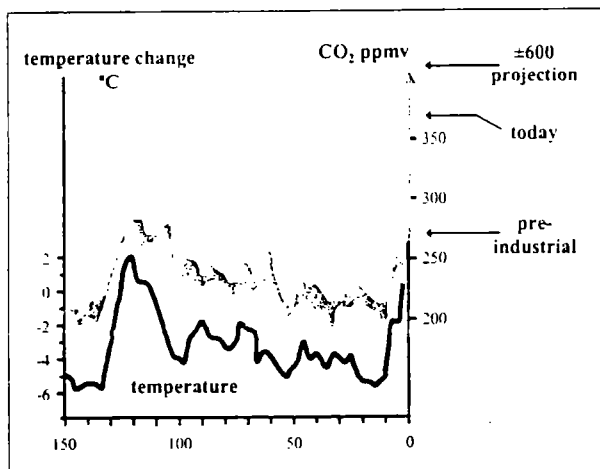


Figure 9: Atmospheric CO₂ concentrations v. global temperature (last 150,000 years)

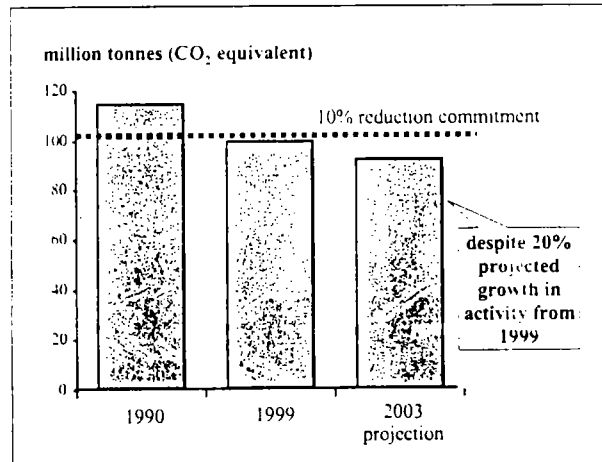


Figure 10: Shell greenhouse gas emissions 1990-2003

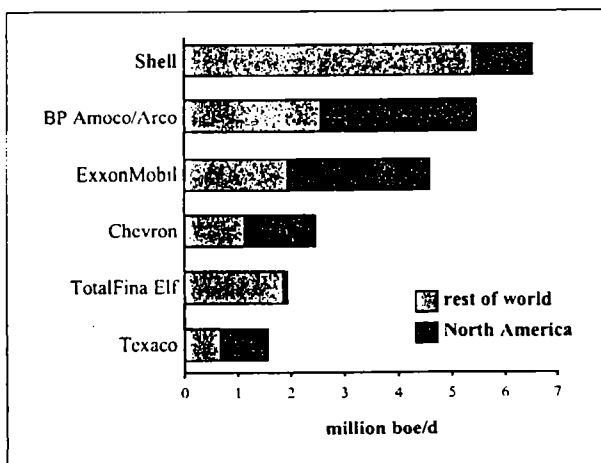


Figure 11: Operated oil and gas production 1998

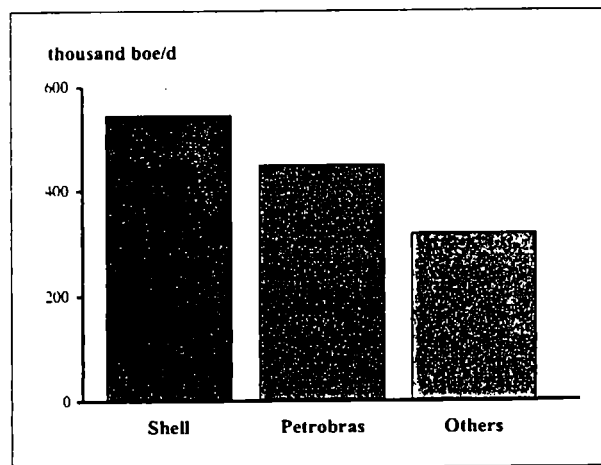


Figure 12: Deep-water operated production (1999)

business value as quickly as possible.

We have developed an internal venture capitalist approach, *Gamechanger*, to harness the creativity of all Shell people.

They are encouraged to put forward ideas to a panel of their peers who decide – within a week – if they are worth developing for submission for expert review. After this a rapid, structured process tests business value and technical feasibility – with the aim of delivering successful ideas for business implementation or commercialisation within a year.

Gamechanger has delivered striking successes in key areas – cheaper exploration, intelligent wells, non-conventional energy, energy conversion and environmental improvement.

We seek to leverage our internal capabilities by working with others. This includes research alliances with key technology institutions around the world – including NTNU in Trondheim.

We also join with others to commercialise our advances – using commercial markets to achieve industry-wide scale and delivery. For example, expandable tubulars are being marketed through joint ventures with Halliburton and Baker Hughes.

I mentioned *Gamechanger* ideas for intelligent wells. We see huge potential from making wells smarter – combining multilateral extensions, real-time measurement, automated control and down-hole processing to improve recovery and reduce environmental impact. We have formed the WellDynamics joint-venture with Halliburton to push such advances forward.

Technology advances are essential for meeting the environmental challenges.

The advantages of gas extend beyond power generation. Gas-to-liquids provides ultra-clean, zero-sulphur fuels to help cut vehicle emissions. We believe it now offers an alternative to LNG for commercialising distant gas. Costs are being driven down – most recently by a breakthrough in catalyst technology from our Amsterdam laboratory. We are planning to build a second larger-scale

Shell Middle Distillate Synthesis plant, possibly in Indonesia. (*figure 16, page 7*)

We are also looking at ways of increasing the efficiency and cleanliness of coal use – using the Shell coal gasification process. We are applying this at Dong Ting in China's Hunan province, as the first of a series of projects with Sinopec.

I believe society has only begun to explore the technological possibilities for tackling greenhouse emissions – for increasing energy efficiency, transforming the ways we power vehicles and generate electricity, sequestering carbon dioxide, and commercialising renewable energy. Shell companies are contributing in all those areas.

Let me give just one example. Together with Siemens-Westinghouse we are investigating generating emission-free power from gas in solid-oxide fuel cells, re-injecting the carbon dioxide. There is wide potential but offshore power generation is an obvious first market. The first onshore pilot will be installed at Kollsnes here in Norway.

New challenges & choices

All businesses face a revolution which is transforming markets and unleashing competition.

The reasons are commonplace – globalisation, market liberalisation, enhanced communications, accelerating technological development and diffusion. Economists argue about whether this really represents a new macro-economic departure.

But for business people the micro-economic reality is far from academic. Survival depends on responding.

Connected, global markets reveal excess capacity and drive consolidation. We have seen this in many industries, including our own. Transparent, immediate markets – with falling transaction costs – test price differentials and drive commoditisation.

Traditional value chains are fragmenting. Easy communications and accessible information challenge middlemen. Falling barriers to entry encourage specialisation and 'cherry-picking'.

"I believe society has only begun to explore the technological possibilities for tackling greenhouse emissions."

"All businesses face a revolution which is transforming markets and unleashing competition."

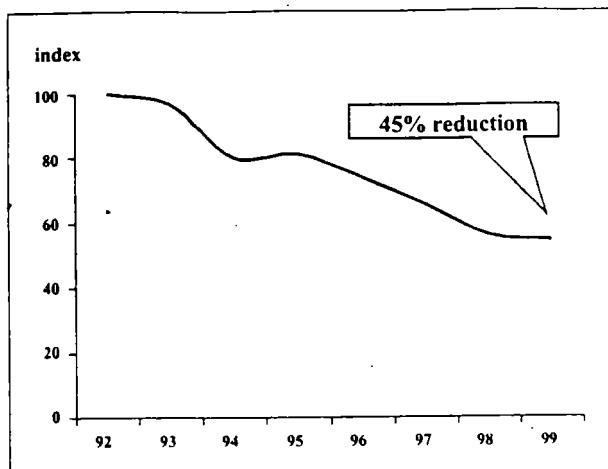


Figure 13: Shell advised LNG ventures – operating costs 1990-99

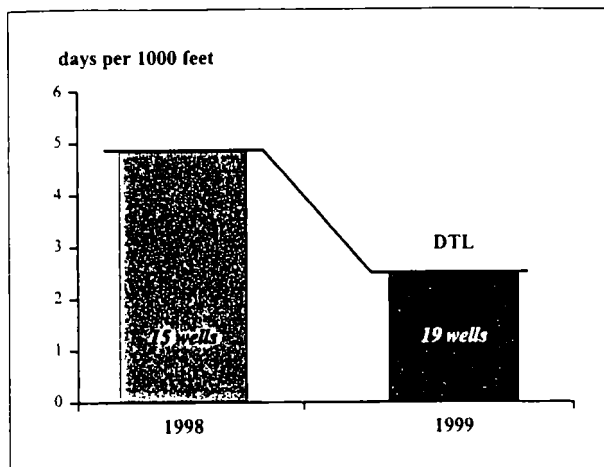


Figure 14: Shell UK – drilling cost reduction (using Drilling the Limit™)

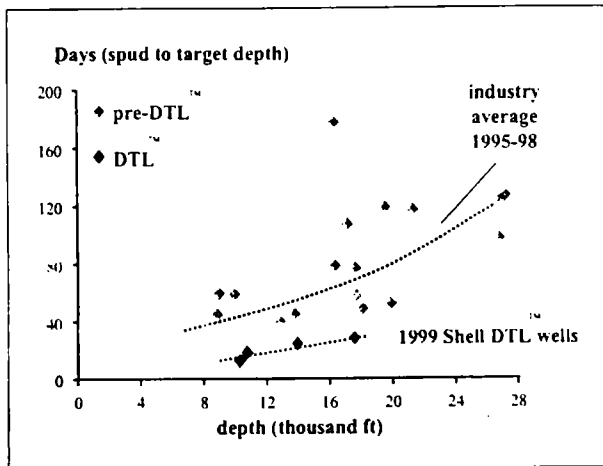


Figure 15: Shell Gulf of Mexico deep water – drilling cost reduction (Drilling the Limit™)

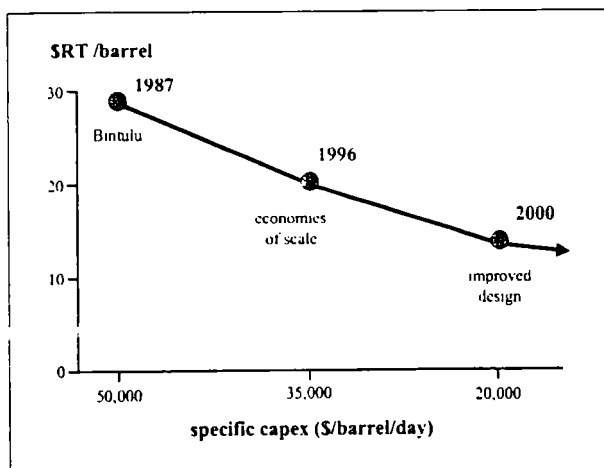


Figure 16: Shell Middle Distillate Synthesis (gas-to-liquids) cost reduction 1987-2000

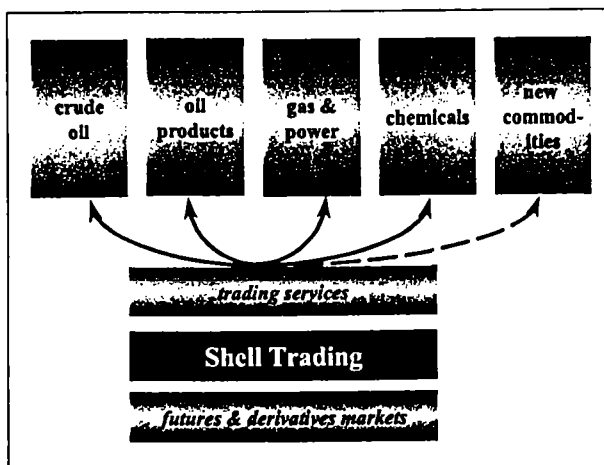


Figure 17: Shell Trading – becoming a multi-commodity global trader

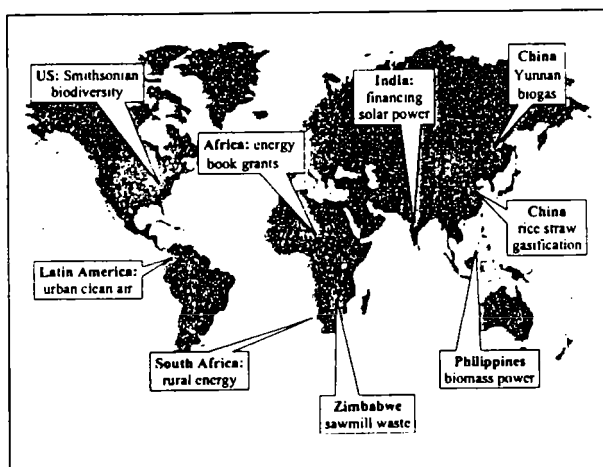


Figure 18: Shell Foundation – Sustainable Energy Programme

But there are also opportunities for creating new value chains – delivering new products and services, in new ways and combinations. Electronic communications enable us to engage and interact with our customers – defining and serving their differing and changing needs.

But who – other than, of course, the customers – is going to reap the rewards of this revolution – new challengers or existing champions? Will new entrepreneurs – first-movers in seizing new opportunities – overtake tired, backward-looking incumbents?

I don't think it is inevitable – or even likely to be general – that new players will win. Of course, it depends on the circumstances. If those incumbents really are tired and backward-looking, there is little hope for them.

But successful companies have strengths – knowledge, assets, brand, cultures of achievement – to harness to those enabling technologies. Strengths which – in complex industries – are hard to replicate. Competitive advantage has always depended on having an edge which others can't copy – as some dot.com companies are finding to their cost.

In Shell, we are committed to learning – by doing – how to harness new possibilities.

Customer focused initiatives include *12move* – which now has 500,000 European subscribers – and the *Shell Geostar*, online journey planning service. In Australia, *Optibuy* helps smaller companies do business with each other. *Coral-connect* helps US energy customers meet their needs.

We are also, of course, customers ourselves, spending billions on procurement. Efficient e-markets should realise huge savings.

We have taken the lead in forming a major internet procurement exchange for energy and petrochemical industries. The founding participants – which include Statoil – spend over \$125 billion a year on procurement.

We are also involved in more specialised on-line exchanges – such as *LevelSeas* for ship management.

To push forward and co-ordinate the

range of experiments – I think we are now engaged in over 100 – we have formed a new unit called Shell Internet Works. It will help us innovate and invest in new technology quickly – building on traditional strengths – and to capture and apply the learning.

Liberalisation offers new possibilities for trading on a global scale.

Shell traders have long been major players in oil markets and now trade over 5.5 million barrels of crude oil and oil products a day – as well as a multiple of paper barrels on top of that – through a global trading network. New skills in trading gas and power are being developed – including moving spot cargoes of LNG into the United States.

We recently combined all our trading operations into a single organisation, Shell Trading. This will build upon existing trading positions and capabilities – expanding to become a major multi-commodity trader in evolving global energy markets. (*figure 17, page 7*)

The most striking characteristic of this business revolution is the increasing extent, pace, intensity and ubiquity of competition. Business is tough. But responding to competition gives companies their drive and creativity.

Success in such environment depends on responding to customers – understanding their needs, delivering value and offering new choices. As the world's largest branded retailer – serving 20 million customers a day in 46,000 service stations – we have plenty of scope.

We believe our customers seek differentiated rather than commodity products.

We have introduced a programme of differentiated fuels – providing combinations of additional cleanliness, performance and engine protection – in more than 20 countries. This has shown that the assumption that fuels are a commodity is premature. Many people are willing to pay extra for their specific requirements.

Business pressures and harried lifestyles demand greater convenience and flexibility – from bundled products and supportive energy services. We are

“... creating new value chains – delivering new products and services, in new ways and combinations.”

“Electronic communications enable us to engage and interact with our customers – defining and serving their differing and changing needs.”

learning how to deliver this.

In the United States, Coral Energy's alliance with the New York utility KeySpan means it manages the supply of gas, electricity and fuel oil to provide the best value for customers. Pulse Energy in Australia is another scheme.

Another aspect of harried lifestyles is the importance of known and trusted brands – guaranteeing quality and business standards.

This industry's customer include the countries we serve by applying our capital and skills to help develop their natural resources. These require as much attention as other customers – responding to their expectations, delivering value and offering new possibilities.

We have been involved in Norway's oil and gas industry from the beginning. We demonstrated our capacity as a project developer with Troll. Norske Shell's quality as an operator is evident in Draugen. We continue to contribute to the technological progress of the Norwegian industry through Demo 2000.

I believe the value of this contribution was recognised with Ormen Lange and in the 16th Round.

But I think there is also an increasing recognition in general of the value international operators bring to the Norwegian industry – reflected in the welcome moves to improve conditions for investment.

It is not only companies that can demonstrate responsiveness.

An important aspect of this is the value of competition in driving progress. This bears on the national debate here in Norway about privatising Statoil, and the future of the state interest. Prime Minister Mahathir of Malaysia raised a similar issue recently – when he questioned the position of state companies, like Petronas, in an industry of mega-mergers.

I don't think it is necessary to be very big to succeed. It has advantages – not least the range of experience encompassed. But the chemistry of business success is complex – and is best brewed in the heat of competitive pressures.

I have no doubt that Statoil has the experience and capabilities to respond to those pressures – and that, if privatisation is decided on, it will succeed.

Demanding expectations

Continuing in business depends on meeting changing – and increasingly demanding – expectations. Let me focus on two groups who are often seen as having opposing interests – shareholders and society as a whole.

No business can survive without meeting their shareholders' expectations for competitive returns – delivering the required performance from existing businesses and demonstrating the reality of future prospects.

I don't believe this conflicts with the interests of society. Shareholders are members of society – like those who work in business and their customers. They share the same concerns and hopes as others. And they recognise that companies must meet societal expectations to prosper.

And, as I have stressed, competitive pressures drive corporate responsiveness. Complacent organisations deliver less to everybody.

There is, of course, no simple blueprint of societal expectations – people's perceptions, views and aspirations differ. But think most people expect businesses:

- to behave properly wherever they are,
- to respect the views of others, and
- to help find solutions to society's problems.

For energy companies, operations in developing countries are a testing ground for corporate behaviour. Inward investment offers great benefits, transferring essential skills. But most of those benefits can accrue to central governments while projects disrupt local systems and damage the environment.

Preventing this requires engaging with local communities to meet their concerns and maximise their long-term benefits.

In the Philippines, the 500 kilometre offshore pipeline which carries gas from the Malampaya field to Luzon –

“... the chemistry of business success is complex – and is best brewed in the heat of competitive pressures.”

“Continuing in business depends on meeting changing – and increasingly demanding – expectations.”

replacing imported fuels for power generation – was re-routed to avoid environmentally, economically and culturally sensitive areas. Environmental improvement and self-sustaining social programmes have been established near the Subic Bay construction site and on Palawan.

In Nigeria, we are working hard to rebuild relationships with local communities. Shell Nigeria has a long record of social investment. It spent \$52 million on behalf of the joint venture last year. But we have learned the need to work with local people – letting them decide priorities and take ownership of the programmes.

Where necessary, companies must be prepared to speak out – when they see breaches of human rights or misuse of oil revenues.

Our approach is defined by the commitment in Shell business principles to contribute to sustainable development – integrating economic, social and environmental considerations, balancing short and long-term priorities.

This is driven by a commitment to engage with people – seeking to understand their points of view, address their concerns and help meet their aspirations. We have to regain people's trust. Much of the fear of globalisation stems from the perception that the world is run only for the benefit of major corporations and the views of ordinary citizens don't count.

Our annual *Shell Report* is the central focus for this dialogue – describing what we are doing to live up to our commit-

ments. Much of the data is verified.

I discussed how we are pursuing technological solutions to the environmental problems of energy.

One aspect of this is our efforts to develop commercial renewable energy businesses – in such areas as solar, off-shore wind, biomass and geothermal energy. One project produces fuel briquettes from saw-mill wastes at Kirkenær in Norway.

But we also recognise the need to invest in community initiatives. The Shell Foundation's Sustainable Energy Programme supports projects to reduce the environmental impact of energy use and to help poor communities in developing countries gain access to modern and sustainable energy. It will invest \$30 million in its first three years and already funds more than 20 projects. (*figure 18, page 9*)

Someone recently asked me whether I would encourage a young person today to join an energy company such as Shell. I think there are few more challenging and worthwhile jobs than meeting the energy needs of a developing world in a sustainable way, few more stimulating than using technology to solve fundamental problems – where creativity is harnessed, and where the opportunities of the internet are being embraced.

I say what I feel myself. That it is a privilege to be part of an industry which is leading the way in building businesses based on human values – which help meet economic needs while contributing to society and safeguarding our shared environment.

“Where necessary, companies must be prepared to speak out.”

“...the commitment in Shell business principles to contribute to sustainable development ... driven by a commitment to engage with people.”

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Mark Moody-Stuart



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THE WHITE HOUSE

Office of the Press Secretary

Internal Transcript

November 10, 2000

WEBCAST REMARKS BY THE PRESIDENT
ON CLIMATE CHANGE

THE PRESIDENT: Next week, representatives from around the world will gather to help shape an international response to one of the greatest challenges we face -- the threat of global warming.

Today, I want to talk with you about what this challenge means for the United States and how we can meet it together. The scientific consensus is clear: the earth is warming and there is strong evidence that human activity is part of the reason why.

Today, I received a report from some of our leading scientists that provides the most detailed assessment ever of the potential impacts of global warming across the United States. This landmark report, undertaken at the request of Congress, pulls together a great deal of scientific analysis and paints a sobering picture of the future.

Scientists project that continued growth in greenhouse gas emissions could raise temperatures across our country by five to nine degrees over the next 100 years. To put that in perspective, the earth has not seen a temperature change of that magnitude since the end of the last ice age, about 15,000 years ago. This new study makes clear that this projected warming threatens serious harm to our environment and to our economy. It could mean more flooding, more droughts, more extreme weather and a serious disruption of water supplies.

It could mean rising sea levels, the loss of species and the destruction of entire ecosystems such as the alpine meadows of the Rocky Mountains. What's more, the scientists warn, there may be many other impacts that we simply cannot predict.

Fortunately, there are steps we can take now to help avert these threats to our future. That's why for the past eight years Vice President Gore and I have pursued common sense strategies to reduce greenhouse gas pollution. We've expanded research and development of solar, wind, biofuels and other renewable energy resources.

We've taken dramatic steps to reduce energy use by the federal government, the world's largest energy consumer. We've adopted stronger energy efficient standards for appliances and

forged new alliances with industry, including the Partnership for a New Generation of Vehicles. These are all steps that reduce greenhouse gas emissions, while saving consumers money and strengthening our economy.

But we must do more. That is why today I'm calling for a dramatic new approach to reducing air pollution from America's power plants, a comprehensive new clean air strategy that will produce significant reductions in the emissions that contribute to global warming.

By adopting one integrated strategy that addresses all the major pollutants -- including mercury and carbon dioxide, the largest contributor to global warming -- we can give electric utilities the flexibility they need to meet our clean air goals in a cost-effective way. A key part of this strategy is the use of emissions trading, which has proven so effective in curbing the pollution that causes acid rain. There is strong bipartisan support for this approach, and I urge the next Congress to take it up as soon as possible.

As we accelerate our efforts here at home, we are committed to working with other nations to take strong and sensible action to curb global warming. As the world comes together next week in the Hague, the United States will work to make real progress toward a treaty that is both environmentally strong and cost-effective. We must continue to move forward together. The stakes of not acting are simply too high.

Thanks for logging on.

END

ARGUMENTS FOR A PRICE CAP

While the Kyoto Protocol sets a clear limit on the amount of greenhouse gases that may be emitted by the developed countries, there is great uncertainty about the price of these emissions reductions. A safety valve would guarantee the United States and other countries that the price of a ton of carbon would never rise above an internationally negotiated level. This guarantee would provide certainty to the business community of the price of each reduction, and may help to ensure Senate ratification of the protocol. Moreover, in the international negotiations, if the U.S. were to succeed in getting a safety valve, it could lessen the need to succeed in our other efforts to ensure cost effectiveness. This may avoid criticism that we are risking the environmental integrity of the treaty with our proposals for credit on sinks and our expansive views on emissions trading and the Clean Development Mechanism. Finally, if it turns out that the price of Kyoto compliance is unexpectedly high for many parties, there may be complete collapse political support for the Protocol and rampant cheating. A price cap would protect against this.

ARGUMENTS AGAINST A PRICE CAP

For all its economic benefits, seeking a safety valve carries substantial risks. Adopting a cap on permit prices would be a fundamental change in the nature of the Kyoto Protocol. By creating price certainty, the cap would simultaneously create environmental uncertainty. Negotiating the cap at an acceptable price may be difficult; there may be pressure from both the EU and the G-77 to seek a high, punitive price. We could end up raising expectations that we can get a cap and then have to back away from it. Even if we were to succeed in the negotiations, a cap may not help us with ratification. The cap may focus more attention on the costs of the agreement, and make it appear more like an internationally imposed tax. Opponents may argue that the ceiling is the real price of the agreement and exaggerate its costs. If countries or companies must pay into an international fund, this may engender substantial opposition. Ratification may be enhanced with price uncertainty, rather than certainty. Moreover, setting a ceiling on the price would distort the market for greenhouse gas permits. If the market believes that the price would be at the ceiling, industry would decrease investment in short-term reductions because they are perceived as too expensive, and undermine investments in technologies necessary for long-term reductions because the price signal is too weak.

LIKELY CONSTITUENCY REACTIONS

The environmental community will strenuously oppose a price cap for undermining the environmental integrity of the agreement. Even the market-oriented environmental groups are opposed because of it distorts the market. The business community appears divided. While there are many who would favor such an approach, many companies, including some large utilities and many progressive companies, oppose a price cap as unworkable or unnecessary. The economics community originated the idea, and could be expected to strongly support it.

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Roger Ballentine
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- b(8)** Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
- b(9)** Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]



The Wisconsin Interfaith
Climate Change Campaign 2000
For Religious Communities

c/o Wisconsin Interfaith IMPACT
750 Windsor Street, Suite #301
Sun Prairie, WI 53590-2149
Phone 608-837-3108 Fax 608-837-3038
E-mail: dsteffe@wichurches.org

Staff Coordinator: Rev. Dave Steffenson, Ph.D.
E-mail: dsteffe@internetwis.com, Home Phone: 920-623-4360

11/9/00

Mr. Roger Ballentine
Deputy Assistant to the President for
Environmental Initiatives
The White House
1600 Pennsylvania Ave., NW
Washington, DC 20500
Fax:202-456-1736

Dear Mr. Ballentine:

I am deeply disappointed that the American delegation to The Hague Climate Summit next week is going with a long list of very weak and rather ineffective proposals for meeting the Kyoto goals we agreed to.

What is being proposed is in sharp contrast to the strong statements of support and assurance of action which you and your staff colleagues delivered to us in person last May when you met with the national briefing for our interfaith campaign held at the NET offices in Washington. I was very impressed with your presentation to us then and very depressed now about the "do-very-little" proposals the US plans to make next week.

I am especially concerned about the forest rules which do little to protect and restore old-growth forests and other native ecosystems (even a grassland sequesters huge amounts of carbon). Real practices by the forest industries that actually reduce net carbon emissions should receive credits, but "business-as-usual" forestry and tree plantations should **not** be credited because they do not sequester carbon effectively or for a long period of time. Nor do the proposals preclude other environmentally destructive forest activities such as the use of pesticides, herbicides, irrigation, and the planting of exotic trees.

Furthermore, sequestration and emissions trading have a place in the overall plan, but they should play a minor role in contrast to the industrial nations taking immediate and major steps to move our economies away from fossil fuels, to move rapidly toward transportation based on hydrogen fuel cells and public transit, to conserve energy use, and to transfer clean technologies to the rest of

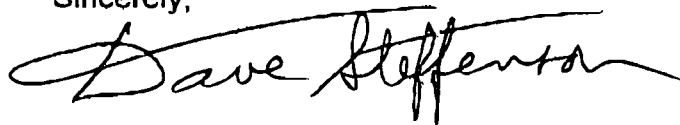
the world so that they can largely "skip over" the fossil fuel phase of development.

I do not believe it is necessary this round to include China and India, who are already doing more than we are to reduce greenhouse emissions, as well as the Third World nations in this Kyoto round. We in the First World, especially the USA, are responsible for an inordinately huge share of greenhouse emissions and ozone destruction, and we must make the reductions first.

I am also ashamed that the UK, EU, Japan, and other industrial nations have committed themselves to meaningful greenhouse gas reductions while we want to hide our lack of real reductions and commitment to change behind cosmetic actions and market mechanisms which are more for profit than for amelioration.

I plead with you and the delegation to take a strong lead in responding to the urgent call of the IPCC which now has found the threat is twice as worse as believed only one year ago. Please "do us proud" next week.

Sincerely,

A handwritten signature in black ink, reading "Dave Steffenson". The signature is fluid and cursive, with a long horizontal line extending from the end of the name.

The Rev. Dave Steffenson, Ph.D.
Wisconsin Campaign Coordinator
Interfaith Climate Change Campaign 2000
of the National Religious Partnership on the Environment

THE GROUP OF 77 AND CHINA
SIXTH SESSION OF THE CONFERENCE OF THE PARTIES (UNFCCC)
The Hague, Netherlands

12 November 2000

His Excellency Jan Pronk
Minister of Housing, Spatial Planning and Environment
Government of Netherlands
and
President-Designate of the Sixth Session of the Conference
of the Parties to the UNFCCC
The Hague, Netherlands

My dear Minister Pronk:

Thanks to the generosity of the Government of the Netherlands, the Group of 77 and China has been able to spend more time in our preessional meetings prior to the commencement of COP 6. On behalf of the Group, I extend our great appreciation to your Government and to you, personally, for your having made the necessary arrangements.

At our preessional meetings, the Group has considered many issues. I will address some of them in the Group's opening statement on 13 November. However, I have been asked by the Group to inform you of our views on a few critical issues prior to the meeting of the Bureau of the Conference of the Parties on Sunday afternoon, 12 November. We request that you and the Bureau carefully consider the following points, which we urgently call to your and the Bureau's attention.

The first issue concerns adoption of the COP 6 agenda. You will recall that, on the last day of the sessions of the Subsidiary Bodies in Lyon, at the request of the Group, the SBI decided the COP should adopt the COP 6 agenda on the very first day of its session. We preferred to avoid deferring until the 20th of November the issue of whether Agenda Item 5 would refer to adequacy of Articles 4.2(a) and (b) of the Convention, or to adequacy of the implementation of those Articles, which is the position the Group proposed at COP 5, or whether Item 5 should be deleted from the agenda altogether.

That preference now has become a matter of a very strong policy position of the Group. This is because various developing country Parties recently received a communication from a key Annex I Party, which seeks to link "ways to expand the participation of developing countries" - which obviously means new commitments in one form or another - with developed countries' obligations in Article 4.5 of the Convention, concerning financing of technology transfer and capacity building to developing countries. We categorically reject that approach, which is totally inconsistent with the Convention, the Berlin Mandate, the Kyoto Protocol, and the Buenos Aires Plan of Action.

To put an end to any such scheme of Annex I Parties, when the COP, at its first meeting on Monday, 13 November, considers adoption of the agenda for COP 6, I will make a motion on behalf of the Group either to delete Item 5 of the Provisional Agenda, currently listed as "Second review of the adequacy of Article 4.2(a) and (b) of the Convention," or to amend Item 5 by inserting "of implementation" after "adequacy" in the current version. The

decision as to which option to present in the motion will be made by the Group at its pre-session meeting today.

Your letter to me of 23 October stated that you intended to "set item 5 aside for informal consultations, without a debate on the topic in the plenary." The Group of 77 and China most strongly urges you to reconsider that approach. We will not be satisfied unless the issue definitively is resolved at the initial meeting of COP 6 on 13 November.

Consultations frequently can be useful, and we understand your desire to try, once again, to work things out on this issue. However, the positions of the Parties are clear. The opposition by any Annex I Party to the Group's motion to amend Item 5 will demonstrate that consultations on this issue will not be productive and will waste precious time that sorely is needed to attempt to reach agreement on the multiplicity of issues that are identified by the Buenos Aires Plan of Action. Developing country commitments are not one of them. Furthermore, because of Rule 16 of the Rules of Procedure being applied, the failure of the consultations will mean that the debate starts all over again when we deal with the agenda for COP 7.

The time has come to put this issue about Articles 4.2(a) and (b) in its proper perspective. The Group of 77 and China will not agree to an approach that would leave Annex I Parties free to engage in their clever game of seeking to have us mortgage our social and economic development in exchange for technology transfer financing.

The second issue concerns the proposal contained in your "non-paper" of 2 November, which was prepared in contemplation of the Ministerial-level consultations at COP 6. The Group of 77 and China is very concerned about efforts to divide the issues into three groupings: (i) "priorities of developing countries," which include finance and frameworks for technology transfer, adaptation and capacity building, as well as the issues under Articles 4.8 and 4.9; (ii) "balancing environmental and economic effectiveness," which includes LULUCF, the Kyoto Protocol mechanisms, and their relationship with domestic action; and (iii) compliance.

The reason for the Group's concern is that the Buenos Aires Plan of Action contemplated a single comprehensive package of decisions. There are many interrelationships between the different elements of that package, and this necessarily means that trade-offs will occur throughout the entire package. The Buenos Aires Plan of Action does not involve two or three separate packages. The give-and-take of the negotiations means that bargaining over one element in a given grouping of issues properly will take into account one or more issues in another grouping. For example, the issues of technology transfer and the CDM are clearly capable of involving trade-offs, and compliance issues cannot be separated from either of the other two groupings of issues.

The issues identified in the Buenos Aires Plan of Action must not be arbitrarily put into separate boxes. They must be negotiated together, following the work of the separate contact groups on individual issues during the first week in The Hague. Having had the pleasure of seeing you in action and having had an excellent dialogue with you, I have informed the Group that I have every confidence in your chairing the single Ministerial-level negotiations that will deal with all of the issues together in a comprehensive and balanced fashion. Our colleagues from other developing countries, who have become acquainted with you, share my faith in you.

The Group strongly takes the position that Ministerial-level consultations and any other form of negotiations should be conducted by you in a single body of such persons and on the basis of not separating into separate groupings, or separate negotiating bodies, the many issues identified by the Buenos Aires Plan of Action.

The third issue concerns the suggestion that only a limited number of Ministerial-level or other representatives of like-minded Parties will be allowed actually to participate in the negotiations during the week beginning 20 November and that the rest of the Ministers will sit merely as observers in the back of the room. That is not acceptable to the Group.

That approach is not consistent with your assurance, in your previously mentioned letter to me, which stated: "On the issue of transparency of the CoP 6 process I fully share your concern that decisions should not be taken by a limited group of Parties behind closed doors." It may facilitate the negotiations for "coordinators" of various groups of Parties, which basically share a common view on an individual issue, to take the lead on such an issue. However, we do not believe it is fair or productive to cast any Ministerial-level persons (or their designated representatives) to the sidelines and deprive them of the ability to engage in the development of a proposed decision, rather than being relegated to reacting to a "deal" made by others.

Fourth and finally, I use this opportunity to respond to your comment in your previously mentioned letter that you "would be very interested to hear your [my] views on how Article 3.14 should be given a place in the compliance regime and the legal approach we should take."

Let me begin by expressing my total agreement with your statement in the letter that "it is my [your] firm belief that Article 3.14 contains obligations which are just as important as the other obligations under the Protocol." As Ambassador Estrada acknowledged during a contact group meeting in Lyon, the Protocol would not have come into existence without Articles 2.3 and 3.14, for they made it possible to achieve the consensus that enabled adoption of the Protocol. I am satisfied that the Parties, which went along with adoption of the Protocol in Kyoto in reliance on Articles 2.3 and 3.14, will never be willing to have those provisions merely be the subject of facilitation under the compliance system, rather than be subject to effective enforcement as in the case of any other type of non-compliance.

There is no valid reason why the Compliance Committee cannot determine, if a case is presented to it, whether one or more Annex I Parties have failed to comply with their treaty commitment in Article 3.14 to "strive to implement" their commitment in Article 3.1 "in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties, particularly those identified in" Articles 4.8 and 4.9 of the Convention. The fact that the phrase "to strive" does not lend itself to a mechanical or quantitative determination does not suggest that non-compliance with the commitment should not be subject to enforcement. There are many examples, under the laws of at least some Annex I Parties, where there are extremely serious enforcement proceedings, involving potentially huge financial penalties, or even imprisonment, for non-compliance with obligations that cannot be measured exactly and which require the exercise of judgment to determine whether there has or has not been non-compliance. The fact that enforcement of standards involves subjective judgments in no way detracts from the ability of society to enforce those standards.

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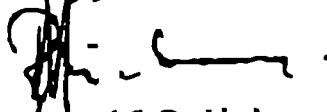
According to one common definition of "strive," it is "to make great efforts; to try very hard." That was the understanding of developing countries' negotiators when Articles 2.3 and 3.14 were agreed upon in Kyoto, and it does not seem likely that the Annex I Parties had a contrary understanding, assuming they were negotiating in good faith. With that definition in mind, the Enforcement Branch of the Compliance Committee should be able to decide whether there was or was not compliance with the commitments in Articles 2.3 and 3.14. It certainly should be able to identify those Annex I Parties who make no efforts, or only rather limited efforts, to minimise the impacts of their actions on the developing countries referred to in those Articles.

It is also possible that the decision implementing the Buenos Aires Plan of Action, insofar as Article 3.14 is concerned, will provide some examples of specific things Annex I Parties must do to implement their commitment under that Article. Various proposals have been made, but are not yet agreed to. If the Annex I Parties will agree to them, they would serve as clear standards to assist in evaluating the conduct of the Annex I Parties. However, the decision of COP 6 concerning implementation of Article 3.14 cannot be the only means by which the Enforcement Branch of the Compliance Committee could determine whether an Annex I Party has complied with its commitment under Article 3.14. The commitment of the Annex I Parties already exists in Article 3.14. Developing countries cannot allow Article 3.14 to become worthless because the Annex I Parties refuse to agree on specific actions that are among those necessary to minimise the impact of their response measures.

The Group of 77 and China previously has expressed alarm that the unwillingness of certain Annex I Parties to allow the commitments in Articles 2.3 and 3.14 to be enforced raises the spectre of lack of good faith either at the time the Protocol was negotiated or now. Every day that refusal persists creates an even darker cloud hanging over the COP 6 negotiations. In this regard, I note that the Annex I Parties are the ones who proposed that the Enforcement Branch be authorised to make determinations based on subjective judgments, rather than some quantifiable standard, in the event of a disagreement concerning application of adjustments to inventories under Articles 5.2 and 7.4. Those adjustments involve very subjective judgments, such as making "estimates that are conservative."

The Group and I look forward to working with you during COP 6, so as to bring this all-important session to a successful conclusion.

Sincerely yours,



Mohammad S. Barikando

cc: codin/pv 677 & China.