

Ladies and gentlemen,

I would like to begin my presentation today by considering the underlying causes of the energy challenges facing Europe and indeed the whole world over the next decades. These are at the heart of the efforts to develop a new Energy policy for Europe.

It seems to me that the underlying causes for these challenges can be best identified by referring to what the Dutch Chemistry Nobel Prize winner Paul J Crutzen has described as the "Anthropocene"; the concept - or fact - that for the first time in earth's history, mankind's activities are fundamentally and negatively affecting the physical systems of our planet.

In particular, because of Mankind's seemingly unstoppable thirst for more and more hydrocarbon based energy, we are on the path to irrevocably change our climate; CO₂ emissions from energy make up around 80% of all greenhouse gases. At the same time, we are creating potentially enormous risks to the stability of our economic system; constantly increasing demand for scarcer and more valuable oil and gas reserves. In turn, these resources are becoming concentrated in fewer and fewer hands.

The key energy challenges we face are therefore climate change and security of energy supply. But our energy goals do not end here; at the end of the day the real question is: how do we achieve these goals in a way that promotes Europe's competitiveness; how do we turn these challenges into opportunities for Europe? These three objectives are therefore the real challenge of developing a truly integrated and European Energy Policy.

Firstly, let me consider climate change. Together with global poverty and peace, this is probably the greatest global challenge of this generation.

In its most recent report issued on 4th May of this year, the International Panel on Climate Change points out that greenhouse gas emissions have increased by more than 70% since 1970. The largest growth during this period came from the energy sector, where emissions have increased by 145%. On present trends the IPCC expects CO₂ emissions to grow by a further 45-110% by 2030, with two-thirds of this increase coming from developing countries. The next Report of the IPCC will be issued on November 7th and is expected to make even more uncomfortable reading.

This results not just from higher economic growth, but also from a rapidly expanding global population. The UN estimates that by 2050 the world population will grow from 6.6 billion today to about 9 billion in 2050, an increase of almost 50%. When one takes account of predicted growth in wealth and the economy, particularly in the developing world, this means roughly speaking that if we continue down the present path, we can expect that by 2050, the world's economy will be between 4 and 6 times larger than it is today.

The pressure on the earth already today, the "Anthropocene", is already putting enormous strains on its physical processes; it is already quite literally "unsustainable". The significance of the word "sustainability", when seen in this context, has a whole different dimension. If we wish to prevent the world's economy hitting boundaries that will cause real damage to human well-being due to pollution, mass migration, climate change, disease and species extinction, change is necessary, change is inevitable, and it almost certainly needs to start in Europe with our commitment to combat global warming.

Furthermore, the consequences of continuing blindly down the path that much of the world is following today have been well documented. And in Europe we are finally coming to realise that climate change is personal; it is not just something that will affect some far-away parts of the world. Climate change has the potential to fundamentally affect Europe's climate, putting huge water stress on many areas, to say nothing of the effect that mass migration across the world will have to our way of life and economic system.

And we have to realise that there is just a brief window during which we can deal with this problem. If the world waits a decade or more, it will be too late. We will have left our children and grandchildren the legacy of climate change and by that time there will be absolutely nothing that they will be able to do about it.

Of course, the difficulties in reaching an effective international agreement to deal with global warming are as huge as the action that is necessary to resolve it. The developed world will initially have to bear the brunt of efforts to reduce emissions, and this raises important questions of international competitiveness. With a *per capita* energy consumption in China more than 10 times lower than the US, it is not surprising that, at least in the beginning, the countries that put most of the CO₂ in the atmosphere, and are the richest because of it, will have to take the lead.

But I believe that we are turning a corner, and that it is becoming increasingly evident that the world will act together to rise to this challenge. We must only hope that the action is not too little and too late. But I believe that we will succeed, for a reason perhaps best expressed by Jeffrey Sachs, the Director of the Earth Institute of the Colombia University in a recent series of lectures.

He points out that the world has already dealt with a similar problem through international cooperation in the 1990's, that of chlorofluorocarbons - or CFC's - which were destroying the earth's ozone layer, a discovery which was also made by Paul Crutzen. As Sachs observes, getting action to deal with this involved a five stage process.

Firstly, science identified the problem. Secondly, the vested interests - the makers of CFC's and aerosols in this case - publicly and actively doubted the science. But nature, the laws of physics, has a way of overcoming vested interests. In the case of CFC's it was the photo taken by NASA of the hole in the ozone layer.

So thirdly, came public acceptance - the realisation that the problem was a personal one, one that would affect the lives of our own children and grandchildren. And so the call to act.

Then came the scientists, scurrying to find a solution. And finally, as Sachs puts it, the crucial stage, when the previously sceptical companies whisper in the ears of politicians "its OK, you can reach an agreement, we can handle this". And from this point on an international agreement was quickly reached.

The climate change debate is following the same path. Although global warming was first identified in 1896, it has only recently become accepted science. Once again, nature, with Hurricane Katrina, the melting of the glaciers in front of our eyes and statistically meaningful and worrying increases in average temperatures, means that climate change is more or less universally accepted today. And it is now beginning to be widely understood that climate change is, indeed, personal.

So, after the initial scepticism on the science, fuelled by vested interests, we now have increasing public acceptance about the need to act, right across the globe. Science has followed and I believe that we are entering Sach's final phase; companies are indeed beginning to whisper in the ears of politicians "its OK, you can reach an agreement, we can handle this".

Let me now turn to security of energy supplies, the second great energy challenge.

The International Energy Agency predicts that oil demand will increase over the coming years by 1.9% per annum. In this respect I would like to highlight one statistic in particular. The number of cars in China has increased from 4 million in 2000, to 19 million in 2005. This is expected to reach 55 million within three years and over 130 million by 2020. On the basis of number of cars per citizen, even this 2020 figure for China would be far

below EU countries, where we have typically over 400 vehicles per 1,000 inhabitants, yet alone the US with over 700 per 1,000. Car ownership in much of the developed world, such as India, is far below the Chinese figure. The potential upside seems almost limitless.

There are oil reserves for decades, but this does not mean that production capacity can increase for ever. In any event, these consumption patterns mean that within a decade the capacity to increase oil production will be in the hands of just a few predominately OPEC countries. As the IEA observes *"the ability and willingness of major oil and gas producers to step up investment in order to meet rising global demand are particularly uncertain."*

The potential effects of these trends on Europe are significant. If, for example, the oil price rose to 100 \$/barrel in 2030, the EU-27 energy total import bill would increase by around €170 billion, an annual increase of €350 for every EU citizen. Very little of this wealth transfer would result in additional jobs in the EU.

The simple conclusion to these trends must be that even if climate change was not an issue, we should in any event be moving away from over-reliance on imported fossil fuels towards indigenous energy which, by its very nature, is largely low-carbon in nature. This is nothing more than a sensible policy on the part of the EU to deal with the mounting price-related energy security risk which results from constantly increasing demand for hydrocarbons.

These are the key issues that the Commission has sought to address in its effort to shape a new Energy Policy: asking the question "how can we turn these challenges into an opportunity for Europe". The result is a vision and a concrete program to achieve it that has now been endorsed by the European Council.

In its Strategic Energy Review, the Commission describes this energy and environment policy as a "new industrial revolution". If, as I believe, the world will have the courage and determination to work together to avoid the catastrophic effects of climate change, this is no exaggeration.

Sir Nicholas Stern, in his remarkable report on the economics of climate change, not only demonstrates that the economic cost of actively dealing with global warming is dwarfed by the likely costs of inaction; he also underlines, as does the International Panel on Climate Change, the level of change in energy consumption and production that will be necessary to take effective action.

The EU has rose to this challenge. The European Council has agreed that until a real international effort to combat climate change is agreed, the EU will unilaterally commit itself to a 20% target, promising 30% when an agreement is reached. But in reality, this is just scratching the surface. We will need cuts of 50% and more by 2050.

To achieve this requires a massive shift to energy efficiency, to low carbon and renewable energy and to carbon sequestration, truly, a new industrial revolution. We know that this is possible: if the whole of Europe would follow Germany and Denmark's lead on

renewable energy, for example, we be a long way towards reaching the levels we need to meet our 20% objectives. Carbon sequestration can be made viable, and at sensible cost of around 30-40 Euro per tonne of CO₂ sequestered.

But the most important point here is that the parts of the world that take real action now to invest in change, in research and development and early implementation of the new generation of low and zero carbon technologies, will gain massively in terms of security of supply and competitiveness tomorrow. It is these regions that will be better able to deal with future price shocks, having invested in indigenous low-carbon energy with stable prices. Above all, however, it is these areas that will generate the Microsofts of tomorrow. This is the Commission's vision of a Europe with an energy and environment policy that takes an ambitious approach towards meeting today's energy challenges.

At the European Council in March the Heads of State have seized this opportunity, endorsing the Commission's vision of a different energy and environment future. It agreed the firm commitment to the 20% greenhouse gas emission reduction by 2020 that I have already mentioned. It has laid down the gauntlet to the Commission to make this a reality and in a manner that contributes to Europe's competitiveness. This is a challenge that my colleagues and I intend to pick up.

Firstly, towards the end of this year, the Commission will table a revision of the Emissions Trading Scheme, taking it beyond 2012 and evolving it so that it is fit to provide the 20% greenhouse gas cuts that the Council has committed Europe to by 2020. It will also table binding national targets for emissions in sectors not covered by the emissions trading scheme. And it will continue - redouble - its efforts to reach a global agreement on climate change.

Secondly, and also by the end of this year, I will table a new "umbrella renewables Directive". This will give concrete effect to the European Council's acceptance of legally binding national renewable energy targets. They will in turn ensure that we meet the 20% share of the EU's energy mix from renewable sources by 2020, as endorsed by the European Council.

A 20% renewable energy target by 2020 is, of course, very ambitious. I have heard some describe it as unrealistic. But if we allow ourselves to accept that such levels of renewable energy are "impossible", we also have to accept that we will leave our children and grandchildren the legacy of global warming. 20% is possible, given the necessary determination.

I have heard others argue that it will be too expensive. I think that it is too expensive not to take this step.

With oil prices at 70\$ and a carbon price of around 30 Euro, this initiative would more or less pay for itself. Not only therefore is this policy a sensible measure to enable Europe to manage its security of energy supply moving into the 21st. Century, it also represents an enormous commercial opportunity for Europe. Relying on technology-driven indigenous energy creates many high quality jobs in Europe. Importing more and more oil and gas does not. The export potential of maintaining and expanding Europe's leading position in renewable energy equipment markets is huge. When the rest of the world really tackles climate changes, these companies really will be the new Microsofts of tomorrow.

Thirdly, from next year onwards, the Commission will start rolling out a whole series of initiatives on energy efficiency; from minimum product standards, to better labelling, to improved building standards, to more efficient transport systems in Europe's cities. The potential here is huge, not just in terms of reducing emissions, but equally in improving Europe's competitiveness.

Fourthly, at the end of this year the Commission will answer the call of the European Council for a European Strategic Energy Technology Initiative.

This is a fundamental plank in Europe's new Energy Policy and in my view the key to turning the challenge of climate change and energy security into a competitive advantage for Europe.

Like all industrial revolutions, success in combating climate change will be technology driven. This means a new generation of energy efficient equipment, carbon sequestration technologies and new materials that bring down the cost of wind and photovoltaic, to name but a few.

It makes no sense for Europe to lead the world in dealing with climate change but not take leadership in developing the next generation of low carbon technology. But this is exactly what Europe risks to do under its present approach.

In the first years of the 7th Framework Programme we will spend around 250 million Euro on renewable energy, energy efficiency and carbon sequestration, increasing to about 450 million in 2013. However, others are on a more ambitious path than we are.

And it is not simply a question of spending more; probably more important is spending it better. We need to improve the coordination of the complementary and sometimes competing research carried out at in the different Member States and at Community level. We need a more targeted approach, defining key objectives for the EU and measuring every single supported project and initiative against those key objectives. And research funding needs to concentrate on being a catalyst for greater efforts at industrial level; not an end in itself. These will be the key issues in the Strategic Technology Plan.

Finally, I should like to turn to the issue of the Internal Gas and Electricity Market - the EUs efforts to develop vibrant and competitive energy markets. As I have mentioned, Europe's emerging energy policy aims at developing a coherent series of measures to achieve the three objectives of climate change, competitiveness and security of supply. The internal energy market is central to all three.

Without a competitive and efficient European gas and electricity market, our citizens will pay too high prices for what is one of their most fundamental and basic of their daily needs. We have a relatively high cost economy in terms of labour costs; this will not change. But we cannot let our costs of capital in other respects rise. If we do, we lose competitiveness, wealth and jobs. The Commission is absolutely committed to retaining jobs in Europe in large industrial energy intensive industries such as chemicals. Without competitive electricity prices, we will fail.

And the need for effective competition is not just about the price of electricity and gas. Ensuring security of supply in an industry that is changing right before our eyes will need massive investment in new networks over the next couple of decades, in the order of billions of Euros in the EU alone.

If we allow a market to persist where incumbents have a commercial interest in limiting new investment - because in that way they can frustrate competitors trying to enter their markets and ensure that supply is scarce - thus pushing up prices and making huge profits at the expense of our citizens, we should not be surprised if in the future more and more of the EU faces an energy crisis.

The action proposed by the Commission here is also central to its climate change objectives. It is a simple fact that without a competitive electricity market any efficient mechanism to deal with this challenge - through a trading scheme - will never work properly; the cost of carbon will be distorted in a manner that makes energy companies profits at the cost to European citizens, and reduces the level of carbon saved.

Over the last two years the Commission has reviewed and studied the present state of competition on these markets in painstaking detail. It identified a number of major shortcomings of the current legislative and regulatory framework, which apply to both the gas and electricity markets. I would like to mention the two most important of these failings:

- Firstly, current rules on unbundling of transmission activities from supply and production activities mean that many network operators still have the ability and incentive to disadvantage competitors' access to its networks and, probably more importantly, creating disincentives to new investment - no company will build new lines that favour more competition on its home markets.**
- Secondly, different powers and competences of regulators, and the absence of competences at the EU level, contribute to the existence of a regulatory gap in cross border transactions, for example with respect to the approval of investments**

The European Union needs to act. And it has to do so in a decisive manner. The Commission has therefore recently tabled the third liberalisation package, a truly ambitious series of measures that would really address, once and for all, these failings. At the end of the day, there is a very simple reason for this - the interests of the citizens of the European Union.

EU citizens have every right to expect that the Union takes the action to guarantee each and every one of them a real and effective choice of suppliers in the short term. The challenges of global competitiveness are with us today, as is the need to ensure that new networks are built and the imperative to develop an operating carbon market.

I will not cover in detail the precise measures that have been tabled by the Commission, but to mention the three main areas:

- firstly, requiring the ownership unbundling of transmission from competitive activities or the transfer of the assets to an independently run transmission operator;

- Secondly, creating of a European Agency for the Cooperation of Energy Regulators and

- Thirdly, harmonising the powers and the level of independence of national energy regulators on the basis of the highest common denominator presently existing in the EU.

I have no hesitation, or make no excuse, from acknowledging that the press reports in recent weeks that the Commission is presenting an "ambitious" and "bold" energy package is completely true. It is bold, it is ambitious, it is difficult. But it is necessary. Without it the efforts of the EU to achieve an energy policy that truly meets its three core objectives will never be achieved.

Ladies and gentlemen, I would like to end my presentation by following Jeffrey Sachs in the lectures that I mentioned above, in quoting John F. Kennedy. It is a quote from his Commencement address in June 1963, when he changed the course of the Cuban missile crisis. He is dealing with peace, but the sentiment applies equally to the most important challenges of our generation.

"Our problems are man-made, therefore they can be solved by man, and man can be as big as he wants. No problem of human destiny is beyond human beings. Man's reason and spirit have often solved the seemingly unsolvable, and we believe that he can do it again. "

I would like to finish on this note, asking not for your support of the Commission's efforts to put the EU at the forefront of the next industrial revolution, but your active engagement to make it happen.

Thank you for your attention.