

**THE WORLD
ENERGY COUNCIL**

***The World Energy Council:
aware and dedicated***

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Mr Chairman, Ladies and Gentlemen, Friends,

First and foremost, I would like to thank you for putting your trust in me. It is a great honour to chair the World Energy Council, from the Rome Congress onwards.

I have been fortunate, as a long-time member of the WEC family, to work closely with a number of its Chairmen, whom I would like to take this opportunity to thank, in particular my friend André Caillé.

Those of us gathered here form a unique, global, non-commercial, and non-governmental community, representing our industry in all its diverse aspects. In my opinion, this diversity is a great strength which enriches our exchanges. We have shown that together we can reach a common vision of sustainable energy development. WEC's message to promote "sustainable supply and use of energy for the greatest benefit of all people" couldn't be more relevant to today's world. Belonging to such a unique profession, vital for the development of today's societies, forms our collective consciousness. Our threefold objective - accessibility, availability, acceptability – is in line with the times.

Access to energy remains a major challenge: we cannot speak of sustainable development when almost two billion human beings are cut off from adequate sources of energy.

Great challenges lie ahead.

I would like to outline

- what I consider to be the new energy context,*
- what conditions must be met to rise to the new challenges,*
- and how WEC can contribute.*

1.

A brand new energy landscape

A Exponential energy growth foreseen worldwide

Today's global population of 6 billion will soar to 9 billion by 2050. By 2050, today's global population of 6 billion will have grown to 9 billion.

Most of the increase will come from developing countries. These countries make up for more than three quarters of the global population but consume only 40% of primary energy and 30% of electricity. The vast majority of the 2 billion people living in these countries do not have access to modern forms of energy. How will we cope with a population increase of close to 70%? Catching up with the rest of the world, in terms of energy access, against a backdrop of overpopulation is going to generate an enormous need for investment.

Substantial changes will go hand-in-hand with this population growth. These people will mostly live in urban settings, creating new megacities which in theory, a better access to energy. But this will have to be achieved while keeping pollution to a minimum, using means that are in line with environmental regulations appropriate to heavily-populated areas.

Moreover, demand in the industrialised world, which is already very high, is also growing. This rate of growth is slower but nonetheless steady.

Our industry is on the brink of investing enormous sums in order to replace obsolete facilities and to build new ones that secure supply to demand.

In the electricity sector, that I know best, we will need to build over the next 25 years:

600 GW of capacity in Europe, 850 GW in North America and 800 GW in China. For Europe alone, this requires an investment of 1,000 billion euros.

The same goes for the oil, gas, transport and coal industries.

Generating new facilities requires capital and further drives up prices which are already soaring.

B Supply lags behind demand while awareness of energy shortage is growing

Hence the current revolution in the energy landscape. In a world where 80% of all energy relies on fossil fuels, oil prices were the first to rocket, followed by gas prices. In the coming decades, these resources will have to cover the majority of global energy needs.

The issue of energy supply is fast becoming a crucial one, mobilising public opinion and governments alike.

Blackouts and insufficient gas pipeline capacity in some regions serve as a constant reminder of our vulnerability.

Most people are aware of the risks while the fear of energy shortage that now grips the economy is causing speculation and amplifying the impact on prices. We are energy-hungry and are afraid of a famine.

We are therefore facing a new situation. For the wealthiest nations, the days when we did not need to invest massively, when we could live off past investments and supply relatively cheap energy, are over. An age of energy shortage, of precious energy, and of enormous investment in energy awaits us.

C Environmental challenges give rise to new constraints

The growth of energy consumption challenges climate specialists. We cannot forget that energy is responsible for all 80% of CO₂ and 35% of all methane emissions.

Local pollution is tolerated less and less, whether it be tied to the processing or use of fuels, nuclear waste or the changing face of landscapes due to the installation of power lines or wind turbines. No energy form is spared. The issue of air quality arises as well with increasing urgency in some cities.

Access to water is also among our environmental concerns. The risk of water shortage is a real one, with usage exceeding population growth twofold, or 10-12% every ten years. Will this lead to “water wars”? The problem is all the more serious as natural cycles could be affected by climate change. We are already witnessing heightened competition between water consumers.

Taking these environmental constraints into account can further add to the cost of energy. Desulphurisation equipment, dust control, denitrification, and efforts to limit noise, visual and olfactory pollution all come at a cost.

We must take stock of this genuine change, not by complaining but by acting.

2..

What solutions must we explore to rise to these challenges?

The solutions will necessarily be complex and depend on the decisions we make today. Furthermore, they will require an institutional and political framework that is conducive to acquiring energy at a reasonable cost.

A What actions must we take?

1) Firstly, improve energy efficiency

Faced with growing needs, one of the most obvious solutions is **using energy more wisely**. Energy efficiency is a win-win situation that is in line with all of WEC's goals.

The potential for energy efficiency has been identified, by both the generation and the consumption ends. According to WEC's own estimates, we only need to increase the output of existing electrical power plants to save on fossil fuels as well as lower CO₂ emissions and cut annual investment requirements by \$80 billion. In the home, energy consumption can be lowered by 40% per square metre at a reasonable cost, by using quality equipment and innovative architectural solutions.

2) Secondly, expand and diversify the global energy mix

We must look at things from a long-term perspective. None of us are strangers to doing so. Before drilling begins on an oil well or a new nuclear power plant has even been designed, we determine their life cycle which can sometimes span a century.

Let us remember that oil and gas have not replaced coal, but grown with it. Other resources will come along. We will need all energy sources and give priority to those that emit little or no CO₂.

In the long run, even if much remains to be said for oil and gas resources and even if technical progress help us extend the useful life of natural deposits,

rising costs and climate constraints, will force us to use them more wisely.

We must keep all our energy options open; no technology should be idolised or demonised.

Coal is abundant and widely available, and interest in it should be rekindled. But clean coal technologies must accompany it: CO₂ capture and storage is a promising development that should be encouraged both technically, economically and in terms of public acceptance.

We must do our share to contribute to the development and promotion of renewable energies such as hydroelectricity, wind power, geothermal, thermal and photovoltaic solar power, biofuels: The range is broad and the potential for growth is considerable.

We must also develop nuclear power which has an inevitable role in this expanded energy mix. It is the only technology that offers supply security and major power capacity with no adverse effect on the climate. Nuclear needs the public's stamp of approval before it can be developed further, and this will result much discussion and further progress in terms of standardising safety regulations and managing nuclear waste.

Decentralised power technologies are likely to develop, and it is our duty to contribute to this. Energy-generating housing would, for instance, merit further investigation.

We will be investing massively in infrastructure – gas terminals, oil and gas pipelines, port facilities and electric power plants – to guarantee security of supply.

More than ever, we need to look ahead and invest in R&D; our efforts must be concentrated and collaborative.

I believe we have the determination to do so.

B Favourable regulation is required

Market mechanisms have proved their worth. They are a highly efficient way to allocate resources, and we hope that they will be used more widely.

But the market is not a jungle. They must be organised, governed by transparent and easily understood laws that give market players the visibility they need for as long as they need it.

This transparency and stability are all the more necessary to attract investors who will help us meet the huge investment requirements that lie ahead. They will only subscribe to what will necessarily be long-term projects if they are offered sufficient profit, security and visibility.

C The role of public authorities

Public authorities will play an important role at several levels. I will discuss two here.

1) Firstly, involvement at the national level

Each country's energy mix depends on its size, history, development, culture and natural and human resources.

Choosing between market systems and public intervention is shaped by a country's development, especially when it comes to encouraging access to modern energy usages.

The stakes are so high that we can only take a practical approach, leaving all ideological considerations aside. What proves to be an efficient solution for one country may not be for another.

More importantly, we must in all cases encourage public authorities to support research, invest for the long term, and push for economically-justified solutions when return on investment takes too long to materialise.

2) Secondly, Improved international energy governance

Energy is a global concern, and so should be the solutions. The Rome 2007 Congress will highlight this dimension. International agreements on cooperation or the environment, for example, will play an important role, as will the guidance given to international organisations.

Needless to say, the solutions are many. Where greenhouse gases are concerned, for instance, some have subscribed to the Kyoto protocol, while others have opted for different approaches. I am convinced that these options – a combination of political priorities, economic tools, industrial cooperation and increased R&D efforts – are not incompatible, and would say that they are complementary in many ways.

It is important to deal with public authorities at all levels. In the past, the

right level was often the national, governmental level. But today the right level may also involve local authorities where, for instance, the local environment is the issue. Or the right level may be broader, where cooperation makes sense in terms of efficiency. We mustn't forget that Europe was founded on communities of coal and atomic energy. Europe in the future must provide an arena for a pan-European energy policy based on an open market.

This combined focus on corporate effort, a stable institutional framework and balanced public intervention gives us every reason to work together to shed light on the energy debate. I will personally be striving to foster more efficient dialogue with public authorities and international bodies over the long term.

And I will do so because I am convinced of WEC's key role in the future.

3...

WEC needs to play a bigger role

The challenges have been identified and are the same for everyone. So are the solutions. But many of these solutions, realistic as they are, are not being implemented. Is there a lack of information, consensus, or do we hesitate when faced with sometimes less-than-rational public opinion?

This question underscores the meaning and importance of the World Energy Council's actions and the key contributions it should be making to the energy debate. We do indeed have a major role to play as a sustainable energy development think-tank.

There are three main areas on which we should focus our efforts.

A Establish WEC as a source of expertise

The quality of the studies and programmes we conduct will be guaranteed by a wide range of participants, as has happened in the past. These studies, if they are to be relevant, may at times look ahead 50 years, such as WEC's energy scenarios study. It is not an unusual timeframe, for industrial companies building dams that will last for a century and operating wells that will be in service for 50 years or longer.

We would do well to get more involvement from national committees comprising corporate executives or experts, public decision-makers, academics, professors and researchers.

B Promote dialogue and cooperation in a trusting environment

Different countries are applying different solutions to the problems of the environment and security of supply. It is WEC's duty to provide a place where different options can be discussed and debated amongst responsible players, setting aside all biased and political considerations. If conducted in the spirit of mutual respect and professionalism, these debates can help the general

public to base their opinions on real rather than perceived risks.

In an increasingly complex world, energy-related decisions do not depend solely on us. I would encourage greater cooperation with other organisations to broaden our thinking and enhance our responses. Where energy efficiency is concerned, for instance, we would do well to compare our solutions to those being applied by experts in the housing, city & town planning and transport sectors.

As such, WEC could encourage forums, conferences and roundtables on specific topics, ensuring that different opinions are voiced. WEC could also develop partnerships to encourage knowledge sharing.

This is the best way for us to promote technological and organisational solutions that are both relevant and acceptable. The right debates will help the general public as well as decision-makers to be better informed.

C Improve communications

What is the point of bringing together expertise and publishing studies if these are not broad enough or do not get the attention they deserve?

There is no doubt that our communication strategy has improved in recent years, but we must go further, perhaps by becoming more responsive to energy-related news.

All of this will require our human and financial resources. We must rely not only on existing resources, like the permanent committees and London office, but also, and more importantly, on member committees. We must emphasise WEC's specific expertise and the quality of its work, and make it even more useful to national committees and their members. I believe that the WEC cannot expand and achieve wider visibility of its ideas unless it can rely on national committees that are stronger, better organised and more widely recognised.

When saying this I am especially thinking about the help that WEC must give to committees in developing countries, both through the London office and the national committees in developed countries.

Conclusion

Here we are then, faced with a brand new energy outlook, one in which WEC will have a key role to play. We have the responsibility to face this unprecedented situation. We have all the necessary skills and experience to tackle these challenges and can call upon complementary expertise as well. In the coming months I am committed to working very closely with you to develop my thinking regarding these challenges and the responses required. I firmly believe in discussion, exchange and team work. But I am also convinced that these exchanges must lead to action. The world of energy is changing, and the World Energy Council must demonstrate its pro-active intelligence, open-mindedness and flexibility if it is to contribute efficiently to sustainable energy development.

Thank you very much.

Pierre Gadonneix

