



Energy Policy in the European Community: Security of Supply, Competitive Energy Services and Environmental Protection

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European Commission, Directorate-General for Energy and Transport

Mr. Chairman, Ladies and Gentlemen,

I thank you very much for the invitation, it is a pleasure for me to speak to the representatives of the world's cable manufacturers.

Now I was asked to give an overview of the Energy Market developments in Europe and the perspectives of Community Energy Policy.

But before I do this, I will first welcome you in Berlin, because Berlin is a very suitable place to talk about energy issues, for two reasons:

In 1885 the first power plant in Germany started to produce electricity, only a few hundred meters away from here in the Markgrafen Strasse. The second event was in 1938, when Otto Hahn discovered nuclear fission in his laboratory in Dalhem, one of the outskirts of Berlin. This gave rise to the development of nuclear energy, now contributing 17% of electricity generation in the world. Both events have changed the world including the business opportunities for your industry.

Now turning to my presentation, to speak about future developments of the European Energy Market within 20 to 30 minutes is a challenge. Not only this is due to the wide area of issues involved, such as the technological developments as we have heard from Giancarlo this morning, the economic dynamics, structural changes and policy decisions, also it has to do with the uncertainties.



Agenda

- European Dimension
 - “Wind of Change” in Energy
 - Perspectives 2030
 - Challenges
 - Policy Strategies
-



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Some people have the opinion that the future cannot be predicted. It was Somerset Maugham who once said: it is bad to know the past, it would be intolerable to know the future. I do not share this view, because I think we can indeed say something about the future.

The old Roman said: *Natura non facit salto*, which means: Nature does not change overnight. In my opinion this applies also to the energy sector, due to the long lifetime and the capital intensity of its investments. So I will speak about the future following the so called Mega trends .

I have organised this presentation like a picture, with the European Dimension in the background, closer to the spectators the “ Wind of Change” and in the forefront three closely linked issues: the perspectives 2030 under “business as usual” assumption, the actual challenges and the policy responses to these challenges.



European Dimension

From Paris (1951) to Nice (2001)

Pillar I

- European Coal and Steel Community (1951)
- European Atomic Energy Community (1957)
- European Economic Community (1957)

Pillar II

Common Foreign and Security Policy

Pillar III

Co-operation in Justice and Home Affairs

European Union (Maastricht Treaty 1992)



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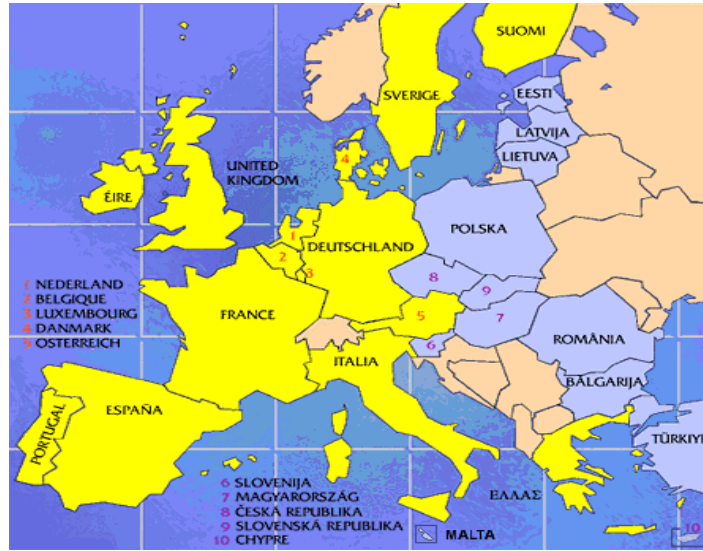
On May 9, 1950, Robert Schumann launched the idea to put the German and French Coal and Steel Industry under the command of a High Authority to insure peace and prosperity for Europe after the disastrous developments of the 2nd world war. This gave rise then to the European Coal and Steel Treaty signed in Paris, 1951. So now we have a 50 year view up to the most recent European Treaty of Nice, 2001. In the start it were 9 countries in the European Community of 1951, now we have 15 countries in the European Union. During the expansion, the community gained a lot of responsibilities and powers.

To mention a few: When traveling in Europe, borders can be passed almost unnoticed. Consumer products have to comply to the same health, safety and environmental standards. Business rules and competition is subject to European law. The EU deals as one block in WTO and GATT. Joint military capacities have been brought in place by the members. In 80 days the Euro will be the cash currency.

The slide shows three pillars: Pillar I the economic building blocks that support the huge internal market. In the Maastricht treaty, two more pillars were added, Pillar II for Foreign and Security Policy, Pillar III for co-operation in Justice and Home Affairs.



Enlargement



Population

EU 15:

375 Million

EU 28:

546 Million

Population: + 45%

Energy: + 24%

GDP: + 6%



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The Treaty of Nice, February 2001, establishes the foundation for enlargement, opening the potential for 13 countries to join the European Union. The dimension is sketched in the map above and key factors should be noted:

Population increase 45% to 546 M

Energy consumption increase by 24%

GDP increase by 6%

Those who look for economic growth by this enlargement, look in the wrong place. The figures do however express the challenges and the business opportunities, when looking at an internal market of more than 500 M consumers.



“Wind of Change” in Energy

| | <i>“yesterday”</i> | <i>“today”</i> |
|------------------------------|--------------------|----------------|
| • Resources: | scarce | ample |
| • Prices: | increasing | fluctuating |
| • Policy: | regulation | competition |
| • Environmental constraints: | local | global |



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Let us move to Energy and the “Wind of Change”.

“Yesterday” here means the late seventies and early eighties, which is yesterday from an energy perspective. Today is the beginning of the 21st century.

Resources then were scarce: remember the book: Limits to Growth. We thought that oil and gas would be exhausted. Today we know that much more can be explored. For coal, some say that the coal age was not in the past but will be in the future. The view has shifted from scarce to ample.

Then, prices were expected to increase, for oil up to 80 \$/barrel. In 2000 we had 29 \$ and today, due to recent events, it has dropped to 20\$.

Then was the idea that energy markets can only be managed by strong governments and close regulation and national monopolies. Today this view has changed: we expect very effective gas and electricity markets by open competition, a fundamental change!

Then local pollution was the focus of environmental care: SO₂, particulates, dying forests. Today these problems have been solved and we face climate change factors, closely linked to fossil fuel combustion, a global matter.

The views have changed almost 180 degrees in the last twenty years. This has severe impact on the business side and foremost on the public perception of the energy question.



Indicators 1998

| | <u>World</u> | <u>EU15</u> | <u>USA</u> | <u>Japan</u> |
|--|--------------|-------------|------------|--------------|
| Population (million) | 5864 | 375 | 269 | 126 |
| GDP/Capita (€90) | 3487 | 16390 | 20563 | 20512 |
| Gross Inland Consumption/Capita (toe) | 1,6 | 3,8 | 8,1 | 4,0 |
| CO2-Emissions/Capita (t of CO2) | 3,7 | 8,3 | 20,7 | 8,9 |

Source EU: 2000 Annual Energy Review



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This slide pictures the ballpark position of the EU in comparison with other defined markets.



Europe's Starting Position

Gross Inland Consumption 1999 in Mtoe

| | | |
|---------------|-------------|---------------|
| Oil | 595 | (41%) |
| Natural Gas | 328 | (23%) |
| Solids | 212 | (15%) |
| Nuclear | 221 | (15%) |
| <u>Others</u> | <u>86</u> | <u>(6%)</u> |
| Total | 1442 | (100%) |

Data for EU15



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This slide shows primary energy consumption of the different fuels.

Clearly oil is king, and all other fuels are expressed in “toe”, tons of oil equivalent.

Solids is coal and lignite.

Others is mainly large hydro and biomass, and a little bit of renewables, in particular wind in Denmark, Germany and UK.



Europe's Starting Position

Gross Electricity Generation 1999 in TWh

| | | |
|-------------------|-------------|---------------|
| Coal | 644 | (26%) |
| Natural Gas | 456 | (18%) |
| Oil | 182 | (7%) |
| Nuclear | 868 | (34%) |
| <u>Renewables</u> | <u>384</u> | <u>(15%)</u> |
| Total | 2534 | (100%) |

Data for EU15



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As you have a special interest in Electricity, this slide relates the primary sources to electricity generation.

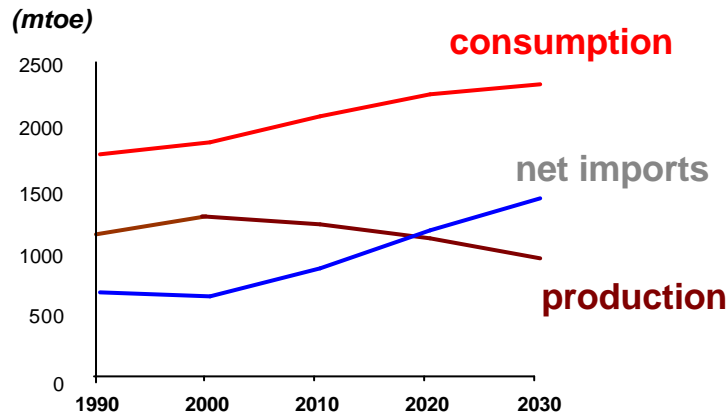
Please note that nuclear is the dominant fuel with 34% contribution, which is not so obvious for people outside the energy sector.

Renewables again, is mainly large hydro.

From this I will develop four slides looking into the future under business as usual assumption.



Europe's Energy Future I



Data for EU30



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This slide demonstrates the import dependency of the European Community for its primary energy.

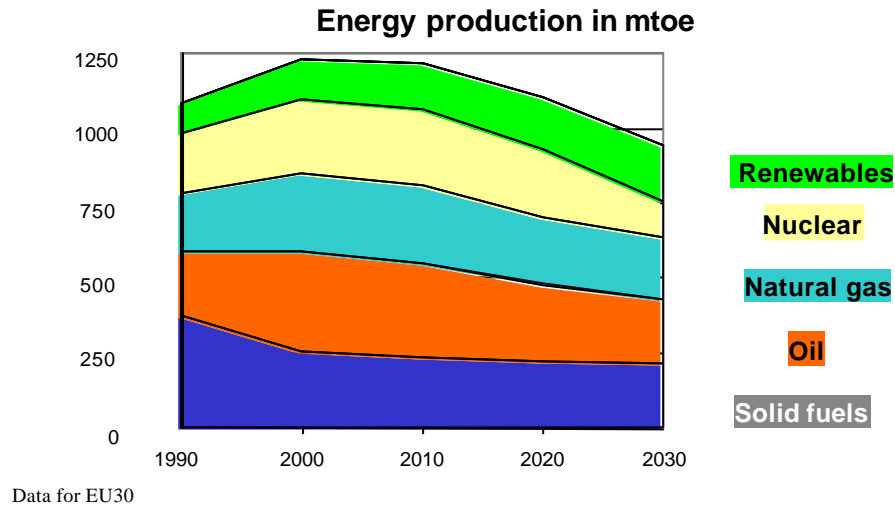
The demand for primary energy is increasing. Due to growth of economic activity the consumption increases, although per unit efficiency improves also.

On the other side, energy production is declining and as a simple mathematical consequence, net imports have to go up.

Energy production within the EU is going down by lack of resources competitive to world market standards. The coal reserves in Europe cannot be mined competitive to coal from Venezuela, South Africa or Australia.



Europe's Energy Future II



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Here we see more in detail the primary energy production in the EU.

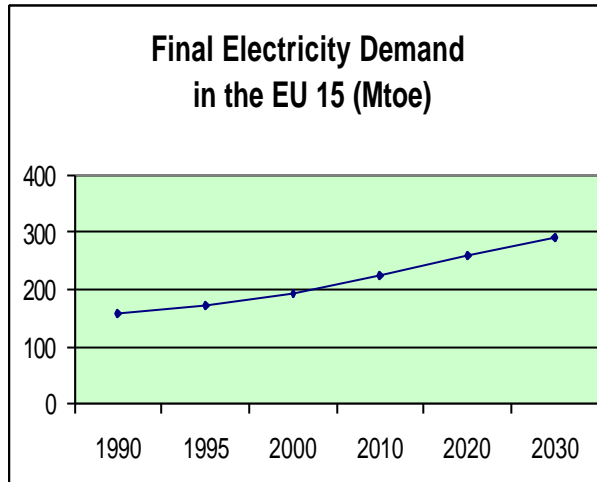
Oil and Gas will peak from North Sea sources and then decrease.

As said, coal cannot compete with world production.

A peculiar case we have with nuclear. As we have seen before, nuclear plays a dominant role in our electricity generation system. However, several members in the community have decided to phase out nuclear. In particular Germany, Sweden and Belgium. Some other countries already had decided so in previous time, e.g. Netherlands. That will require substitution of phased out nuclear with other means. For this reason more and more natural gas is applied as competitive fuel for electricity generation.



Europe's Energy Future III



**1990/2000:
+ 24%**

**2000/2030:
+ 50%**



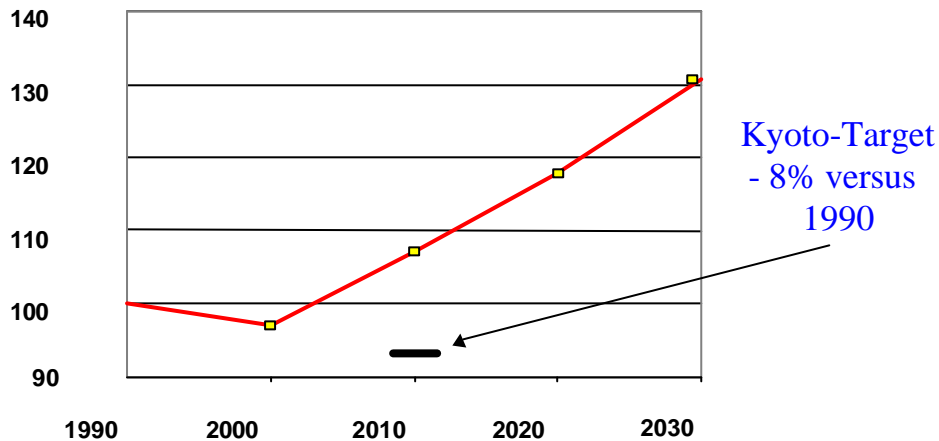
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This slide shows the electricity demand forecast for Western Europe. Over the recent 10 years the average increase in demand was 24%. We will see a further increase of approximately 50% over 30 years. This is a hopeful picture for cablemakers, because more electricity means somehow also more cables. Also this prognosis is in line with the ideas presented by Giancarlo in his presentation.



Europe's Energy Future IV

CO₂-Emissions (1990=100)



Data for EU30



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Here we have a graph of the primary energy related emissions of CO₂.

I will not now engage in the climate change discussion, but we have a strong commitment in Europe towards climate protection by way of the Rio Convention of '92, the Kyoto Protocol of '97 and the Bonn Agreement of 2001, concerning the details of Kyoto. The EU is now committed to ratify the Kyoto Protocol before the next Environment Summit in 2002 in Johannesburg. That means the Kyoto Protocol will be a legally binding basis for the overall energy policy in Europe.

The slide shows that we have managed so far our duties and reduced emissions over the last ten years. But we have to admit this is the result of special events: in one part of the German re-unification and the restructuring of the economy in eastern part, resolving the carbon intensive use of lignite. The other part results from a massive switch from coal to gas, in particular in the UK.

However, with business as usual, as just described, the emissions - related to the basket of six greenhouse gases - will increase. So it will be very difficult for the EU to meet the 2012 Kyoto target, of minus 8% compared to 1990.



Challenges

- minimise exposure to potential supply disruptions
- preserve the competitiveness of the economy
- reduce emissions in a context of economic growth

“contribute to sustainable development of the society”



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This then lists the main challenges for Europe.

The security of energy supplies has to be maintained,

Competitiveness vs the other world players has to be preserved in order to keep prosperity,

And emissions have to be reduced while planning to have an increase in economic activity.

All over that will be our contribution to sustainable development.

From an energy point of view that concept, sustainable development, means to provide a secure, competitive and environment friendly energy system. It is easy to understand by taking the reverse:

- An energy system which is not secure, which risks disruptions, cannot contribute to sustainable society
- An energy system which is not competitive, which does not support the economic activity, which risks unemployment, can also not be sustainable
- An energy system which does not observe environmental protection and that destroys the ecological basis on earth can also not contribute to a sustainable society.



Policy Strategies



“Towards a European Strategy
for the Security of Energy Supply”

- Set out all energy options and alternative solutions
- Opens a debate until end 2001



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To do all this, the European Commission has set up a “Green Paper”, published November 2000, that opens the debate about the European Strategy. Every stakeholder is invited to participate in this process.

Green Paper is Community language for a document to prepare the ground. Then Later will follow a White Paper, putting the findings in defined directives and regulations.



Proposals

- Energy efficiency (transport, buildings)
 - Spread new technologies
 - Complete the single market
 - Review energy taxation
 - Increase the share of renewables
 - Open debate about future role of nuclear
 - Dialog with producer countries
-



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Above bullet points list the chapters of the Green Paper.

Bulk consumption of energy is in transport and domestic heating. Efficiency improvement here has immediate effect.

Technologies, engineers, industry and know-how, all is available and this potential must be exploited.

In the integrated single market by 2005, also as explained by Giancarlo, end users - both industrial and private - can choose for the best option.

Energy taxation to be harmonized, while maintaining competitive level.

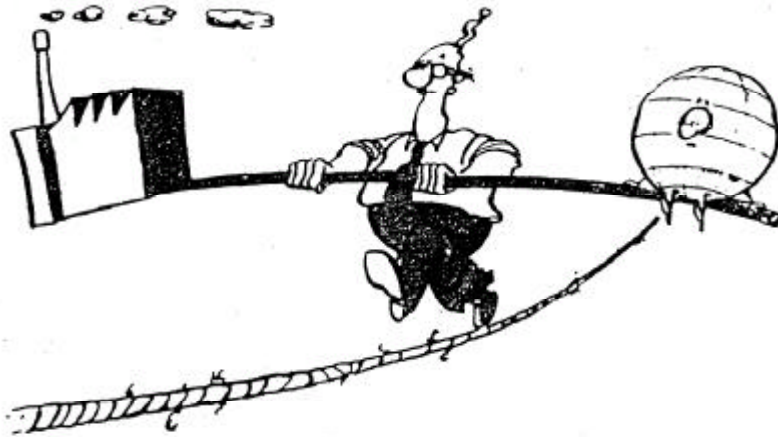
Renewables now provide 6%. A very ambitious target has been set to double to 12% by 2010.

The future role of nuclear must be discussed because the obligations towards climate protection seem almost impossible to fulfil without having the nuclear option available. So it is now the time to reconsider the nuclear option.

The dialog with the producer countries should be fostered, to ensure proper functioning of the market.



Keep the Balance



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Europe now is in the transition phase.

We are changing the energy systems from the past, from “Yesterday”.

We have to build the bridge to the energy system of the future.

The European Community will provide the framework for a sustainable development: secure, competitive and environment friendly.

This transition will not be an easy job, the framework is the first step. Industry and People will have to deliver the results.

So the result depends on me, it depends on you, it depends on us.

In particular it is important to keep the proper balance between economic prosperity at one side and our environment protection on the other.

Reviewing this picture I must admit that for this audience I should not have used a rope, but a cable.....

Next time it will be a cable!

Thank you very much for your attention.