

THE SECURITY OF ENERGY SUPPLY

THE EUROPEAN COMMISSION'S GREEN PAPER STIMULATES DEBATE

The growing dependence of the European Union (EU) on external supplies of energy is the central focus of a "Green Paper" issued in late November 2000 by the Commission of the European Communities in Brussels. Entitled "Towards a European Strategy for the Security of Energy Supply", the Green Paper is intended to stimulate debate on the EU's energy policies and strategies. European member States are "interdependent," the Green Paper states, "both because of climate change issues and the creation of the internal energy market. Any energy policy decision taken by a Member State will inevitably have repercussions on the functioning of the market in other Member States. Energy policy has assumed a new, Community dimension."

Three main points emerge from the Green Paper:

■ *The EU will become increasingly dependent on external energy sources; its enlargement will not change this situation. Based on current forecasts, energy dependence will reach 70% by the year 2030.*

■ *The EU has very limited scope to influence energy supply conditions; it is essentially on the demand side that the EU can intervene, mainly by promoting energy saving in buildings and the transport sector.*

■ *The EU presently is not in a position to respond to the challenge of climate change and to meet its commitments, notably under the Kyoto Protocol.*

Featured here is the Executive Summary of the Green Paper.

The European Union is consuming more and more energy and importing more and more energy products. Community production is insufficient for the Union's energy requirements. As a result, external dependence for energy is constantly increasing.

The dramatic rise in oil prices which could undermine the recovery of the European economy, caused by the fact that the price of crude oil has tripled since March 1999, once again reveals the European Union's structural weaknesses regarding energy supply, namely Europe's growing dependence on energy, the role of oil as the governing factor in the price of energy and the disappointing results of policies to control consumption. Without an active energy policy, the European Union will not be able to free itself from its increasing energy dependence.

If no measures are taken, in the next 20 to 30 years 70% of the Union's energy requirements, as opposed to the current 50%, will be covered by imported products. This dependence can be witnessed in all sectors of the economy. For example transport, the domestic sector and the electricity industry depend largely on oil and gas

and are at the mercy of erratic variations in international prices. Enlargement will exacerbate these trends. In economic terms, the consequences of this dependence are heavy. It cost the Union some 240 billion Euro in 1999, or 6% of total imports. In geopolitical terms, 45% of oil imports come from the Middle East and 40% of natural gas from Russia. The European Union does not yet have all the means to change the international market.

The European Union's long-term strategy for energy supply security must be geared to ensuring, for the well-being of its citizens and the proper functioning of the economy, the uninterrupted physical availability of energy products on the market, at a price which is affordable for all consumers (private and industrial), while respecting environmental concerns and looking towards sustainable development, as enshrined in Articles 2 and 6 of the Treaty on European Union.

Security of supply does not seek to maximize energy self-sufficiency or to minimize dependence, but aims to reduce the risks linked to such dependence. Among the objectives to be pursued are those balancing between and diversifying of the various

The Green Paper: Towards a European Strategy for the Security of Energy Supply was issued 29 November 2000 by the Commission of the European Communities in Brussels. More information is available on the Commission's Web site at www.europa.eu.int/comm.

sources of supply (by product and by geographical region).

New Challenges. The European Union now has to face new challenges characteristic of a period of profound transition for the European economy.

In the decade to come, *investments in energy*, both to replace existing resources and in order to meet increasing energy requirements, will oblige European economies to arbitrate among energy products which, given the inertia of energy systems, will condition the next 30 years.

The *energy options* exercised by the European Union are conditioned by the world context, by the enlargement to perhaps 30 Member States with different energy structures, but above all by the new reference framework for the energy market, namely the liberalization of the sector and environmental concerns.

Environmental concerns, which are nowadays shared by the majority of the public and which include damage caused by the energy supply system, whether such damage is of accidental origin (oil slicks, nuclear accidents, methane leaks) or connected to emissions of pollutants, have highlighted the weaknesses of fossil fuels and the problems of atomic energy. As for the struggle against climate changes, this is a major challenge. Climate change is a long-term battle for the international community. The commitments made in the Kyoto Protocol are only a first step. The European Union has reached its objective in 2000, but greenhouse gas emissions are on the rise in the Union as

in the rest of the world. It is much more arduous to reverse this trend than it might have seemed three years ago. The return to sustained economic growth on both sides of the Atlantic and in Asia and the development of our energy consumption structure, mainly of electricity and for transport, which is a consequence of our lifestyle, are contributing to the increase in greenhouse gas emissions and of carbon dioxide in particular. This situation is a major stumbling block to any policy seeking to safeguard the environment.

What is more, the achievement of the *internal energy market* has given a new position and role to energy demand. New tensions are appearing and our societies will have to find valid compromises to ease them. For example, the fall in electricity prices goes against policies to curtail increasing demand and to combat climate change, while the competition introduced by the internal market is changing the conditions of competitiveness for the different sources of energy supply (coal, nuclear, natural gas, oil, renewables).

Nowadays the *Member States are interdependent* both as regards the issue of combating climate change and for the completion of the internal energy market. Any energy policy decision taken by one Member State will inevitably have an impact on the functioning of the market in the other Member States. Energy policy has assumed a new Community dimension without that fact being reflected in new Community powers. In this context, it is

appropriate to analyse whether it is worthwhile conceiving a European energy policy from an angle other than that of the internal market, harmonization, the environment or taxation.

The European Union must take better charge of its energy destiny. We are obliged to acknowledge that, despite the various crises besetting the European economy in the last thirty years, there has not been a real debate on the choice of energy sources and even less an energy policy regarding security of supply. Now, the twin pressures of environmental concerns and the new functioning of the European energy market make this debate inevitable. The oil price crisis prevailing since 1999 makes it urgent.

This debate should take into account that current energy demand is covered by 41% oil, 22% gas, 16% coal (hard coal, lignite and peat), 15% nuclear and 6% renewables. If nothing is done, the total energy picture in 2030 will continue to be dominated by fossil fuels: 38% oil, 29% gas, 19% solid fuels, 8% renewables and barely 6% nuclear.

Energy Strategy. The Green Paper sketches out the bare bones of a long-term energy strategy, according to which:

- The Union must rebalance its supply policy by clear action in favour of a demand policy. The margins for manoeuvre for any increase in Community supply are weak in view of its requirements, while the scope for action to address demand appears more promising.

- With regard to demand, the Green Paper is calling for a real change in consumer

ENERGY DIVERSIFICATION: ELECTRICITY TRENDS

The Green Paper notes that demand for electricity has grown much more rapidly in the European Union than for any other type of energy and that it will continue to track the growth in Gross Domestic Product until 2020. In countries applying for EU admission, this demand should grow even faster, with electricity increasing by 3% annually between now and 2020.

The EU's installed electric capacity should reach 800 to 900 gigawatts-electric (GWe) around 2020, compared to the present 600 GWe. Around 300 GWe of capacity will be installed over the next 20 years simply to replace power stations that have reached the end of their lives, in addition to the 200 to 300 GWe that will be necessary to meet increased demand.

In the absence of any major technological breakthrough, excess demand will have to be supplied from already available energy sources: natural gas, coal, oil, nuclear, and renewable

energy. At present, electricity is generated from the following sources: Nuclear (35%), solid fuel (27%), natural gas (16%), hydro and other renewables (15%), and oil (8%). New capacity will predominantly be gas-generated, while the number of oil and solid-fuel stations will continue to decline.

At the moment, it seems unlikely that nuclear energy will see renewed growth. In the long term, its contribution is linked to the pursuit of policies to combat climate change, its competitive position vis-a-vis other energy sources, public acceptance, and a possible solution to the problem of nuclear waste. Given the present political context, it seems likely that the contribution of nuclear energy will change little from now until 2020.

In EU applicant countries, the expansion of nuclear generating facilities will depend upon efforts by the States to ensure that these facilities are safe.

behaviour. It highlights the value of taxation measures to steer demand towards better-controlled consumption which is more respectful of the environment. Taxation or parafiscal levies are advocated with a view to penalizing the harmful environmental impact of energies. The transport and construction industries will have to apply an active energy savings policy and diversification in favour of non-polluting energy.

■ With regard to supply, priority must be given to the fight against global warming. The development of new and renewable energies (including biofuels) is the key to change. Doubling their share in the energy supply quota from 6% to 12% and raising their part in electricity production from 14% to 22% is an objective to be attained between now and 2010. If current conditions

apply, they will stagnate around 7% in ten years. Only financial measures (aids, tax deductions and financial support) would be able to buttress such an ambitious aim. One way which could be explored is that profitable energies such as oil, gas and nuclear could finance the development of renewable energies which, unlike traditional energy sources, have not benefited from substantial support.

The contribution of atomic energy in the medium term must, in its turn, be analysed. Among the issues which will certainly form part of the debate will be the decision by most Member States to relinquish this sector, the fight against global warming, security of supply and sustainable development. Whatever the conclusions of this reflection, research on

waste management technologies and their implementation in the best possible safety conditions must be actively pursued.

As far as oil and gas are concerned, imports of which are increasing, a stronger mechanism ought to be provided to build up strategic stocks and to foresee new import routes.

Every form of technological progress will help to reinforce the impact of this outline energy strategy.

The Commission proposes to launch a debate during 2001 around the essential questions which shed light on the energy choices to be made. It is not a question of proposing a "key in the door" strategy for security of supply, but to hold a new and deep debate on the principal questions which can be identified, notwithstanding possible additional ones. □