The EU energy Commissioner's point of view

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The keywords of energy policy slip easily off the tongue: cleaner energy, more efficient energy use, a higher take up of renewable energy, less pollution, fewer emissions, competitive markets, managing radioactive waste, secure and diverse supplies. More difficult is the task of understanding and addressing the complexity of challenges which these phrases represent, whether we are politicians, captains of industry, energy producers, service providers or simply an energy user. This article will explore where, as Commissioner for Energy in the European Commission, I believe the European Union's priorities should lie as we address these challenges.

1. Addressing the challenges of the next five years – An increasingly complex task

In 2000, the European Commission made a substantial analysis of the challenges facing Europe's energy supply. The result, the Green Paper "Towards a European strategy for the security of energy supply"[2] set out a number of scenarios which remain relevant.

First, on energy dependence: even taking into account recent new laws, EU dependence on energy imports is forecast to rise to 68% of our total energy supply, up from around 50% today.

Second, on energy demand: in the transport, buildings and electricity sectors, demand is rising steadily, particularly for carbon emitting fossil fuels. In industry and manufacturing, energy demand is falling in places, but this is at least in part because many energy intensive activities have been moved overseas, often to far less efficient factories in the developing world.

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[2] COM(2000) 769 final

As a result, the EU is consuming growing volumes of the world's limited resources.

Third, we are not yet on track to reach our targets for renewable energy, neither in the electricity nor in the transport sectors. On current trends, we can expect renewables to have a 9% share in our energy supply by 2030, with fossil fuels accounting for around 80%. We have to change this balance. Finally, it is estimated that CO_2 emissions in the European Union alone are likely to exceed their 1990 level by 14 % in 2030. Unless we change our method of energy production and reduce demand for fossil fuels significantly, we are unlikely to achieve the objectives of the Kyoto protocol.

The scenarios might still ring true, but in other ways the world has changed almost beyond recognition in the last five years. Today, the energy scene is probably more uncertain than at any time since the 1970's – and more complex than ever before. Many of today's concerns could hardly have been anticipated just four years ago: record oil prices (in nominal terms), blackouts in several Member States, a strong perception of a terrorist threat, a spiralling need for imports in countries such as China and India, or the speed with which the production capacities and net exports of some countries, such as Indonesia, the UK or Argentina, have fallen.

2. Progress to date – on the right path, but a long way to go

The European Commission has taken numerous initiatives to address the challenges to energy supply. The Commission of Mr Prodi secured the adoption of a major package to open up Europe's gas and electricity markets. Other major achievements include directives on the energy performance of buildings, on the promotion of co-generation, on renewables and on biofuels for transport. Some of the proposals of the previous Commission are still on the table of the Council of Ministers, who, together with the European Parliament, are responsible for the final decision. These include a package to improve security of supply in the internal electricity market and a proposal for an energy efficiency target.

The EU has also taken steps to establish a real co-operation with oil and gas producers and transit countries, like Russia, Ukraine, OPEC and others which share our objective of energy security and stability in energy markets. Since its inception in October 2000, the dialogue between the EU and Russia, our most important energy partner in terms of volume, offers

promising results. This could offer a model for similar dialogues with other partners. We are in the process of establishing a closer dialogue with suppliers from the Middle East, particularly the Gulf Cooperation Council and OPEC. We are also stepping up energy cooperation with Western Balkan countries, the Mediterranean region bordering the EU and the Caspian region.

Another area where energy has been given priority is technology development. Hydrogen technologies, carbon capture and sequestration, biomass and nuclear fusion are some of the areas where EU support has made a difference to the viability of projects and facilitated fruitful collaboration among Member States.

3. My agenda for the future – a six point plan

Despite our efforts, a new push is needed to take us closer towards a truly sustainable and secure energy supply. To address this challenge, I have identified six main fields where the EU must act. These are: first, to reduce energy demand; second, to promote renewable energy sources; third, to improve the linkage between energy policies and environmental and research policies; next, to ensure the proper functioning of the internal market for gas and electricity for the benefit of all our citizens; then, to strengthen nuclear safety and security; and finally to develop energy policy relations with other countries.

4. The first priority is to reduce energy demand.

The Commission argued in 2000 that energy demand management as the foremost instrument to increase energy supply security. Since then, there has been remarkable agreement on this point. Every unit of energy which is saved is a unit which does not have to be produced, processed, transported and paid for. There is also a great potential for highly skilled jobs and export opportunities in the research, development and marketing of energy efficient technologies. This is one industry where the EU is ahead of the USA.

The potential for energy saving is considerable. Overall, less than half of raw fuel is processed into productive energy. The rest is lost in transport, heat or waste. One fifth of all energy use could be saved through cost effective steps which energy producers and consumers could take. These might include the use of more efficient lighting, passive heating and cooling,

switching off appliances in stand-by mode, not to mention the health and environmental benefits of leaving the car in the garage or using the stairs instead of lifts. Despite this, and despite years of rhetoric about the benefits of energy efficiency, energy demand continues to rise. Europe, like the rest of the developed world, is slowing down in energy efficiency improvements. If current trends continue, our energy needs could rise by over 10% over the next 15 years, of which some 80% would be for fossil fuels.

Improving energy efficiency will be my first priority as European Commissioner for Energy. This means ensuring that new EU legislation on energy efficiency in buildings, cogeneration and the environmentally-friendly design of energy using equipment is fully implemented in all Member States. It also means giving the EU the resources necessary to fund programmes to disseminate best practice and efficient products, such as through the Intelligent Energy for Europe programme. We also need an early agreement in the Energy Council on the Commission's proposal for an energy efficiency target. And we must place energy efficiency at the heart of the Lisbon process and Kyoto strategy.

On 22 June the Commission adopted a new Green Paper on energy efficiency, setting out a strategy to set the EU on course for lower overall energy consumption. It considers action to improve energy use and production at all levels – international, European, national, local and individual, and involve all sectors of industry and society. My objective is to set Europe a target to save, by 2020, one fifth of its energy consumption. In practical terms, therefore, we need to limit energy use in Europe in coming years to present levels and then, gradually, to reduce it. This would represent savings of around €60 billion per year, and could reduce our import bill by one quarter. It would also bring appreciable results in terms of innovation, new jobs, competitiveness and significantly lower CO_2 emissions.

The final goal must be to motivate real and lasting change. The benefits of saving energy must be made clear to every single individual in the EU. The success or failure of our policies will come from the sum of the efforts of the 450 million people who make up the EU. We need to capture the imagination of the man in the street with our message. We also need to galvanize our partners in the world, including countries such as China and the USA, where recent increases in energy consumption have been particularly strong.

5. My second priority is to promote renewable energy sources and technologies.

The EU has a variety of renewable energy sources – wind, solar, hydro, biomass and waste, geothermal. These offer locally generated sources of energy, producing less pollution and removing the need for massive infrastructure. Our industries are among the world leaders in renewable technologies, and renewable technologies offer exciting prospects for research and development, jobs and export contracts. If we can better exploit our renewable resources, then our economy, environment and energy supply will benefit. Yet the simple fact remains: the playing field is tilted in favor of conventional energy technologies, as they are cheaper, more established in the marketplace and are supported by existing infrastructure.

It is forecast that, under business as usual, demand for renewables will be more or less stagnant for the foreseeable future in relative terms. Yet the EU has a goal to double the share of renewable energy to 12% by 2010. How will we achieve this?

The Renewables Directive commits Member States to reach, for the whole of the EU, a share of 21% for renewables in its electricity supply. However, if current trends continue, we might not exceed 18%[3]. Member States are also committed to increasing the share of biofuels in transport to 5.75% by 2010. Some Member States, though, are slow to take the necessary actions.

It appears that, to make a real difference to the take-up of renewable energy, more radical measures are needed, as well as a strong commitment from all Member States, who bear the main responsibility for making the targets reality.

Adequate funding must also be made available at the national and local levels to ensure that renewable energy can take off. This was the case for conventional energy in the past, and new systems must be developed to give renewable energy technologies the necessary push so that they become economically viable and can compete effectively in the market. Direct support measures will remain essential in the future to ensure open competition among all energy sources and to assure sufficient penetration of

[3] Communication from the Commission to the Council and the European Parliament; The share of renewable energy in the EU COM(2004) 366 final

green electricity in the market. It is also vital to improve the integration of renewable electricity in regional or local planning and to clarify grid-connection procedures.

Wind energy provides an interesting example of how appropriate support schemes and quantified targets, together with the removal of administrative barriers, can assist the adoption of renewable energy technologies.

Europe is currently the world leader in wind energy, accounting for 72.4% of new wind installations in 2004. At the end of 2004 the Union's cumulative wind capacity was 34,205 MW[4] and, over the past six years, the average annual growth rate in the European Union was of 20%. However, the success has been uneven, with Germany, Spain and Denmark representing more that 80% of installed wind power capacity in Europe.

Direct support measures will remain essential in the future to ensure sufficient penetration of green electricity in the market to meet our agreed targets.

The benefits are not only in terms of energy supply. Wind power in Europe is already today saving 50 million tonnes of CO_2 a year. Wind turbine manufacturing turnover represents 5.7 billion Euros for the EU economy.

Later this year, the Commission intends to publish a Communication on the financing of renewable energy sources. This will include an evaluation of the different support schemes implemented around Europe. We shall identify current best practice, as well as assess the corresponding support necessary to continue stable growth within the rules of the internal market.

6. My third priority is to improve the link between energy policy and environmental and research policies.

Energy research can play an important role in achieving energy policy objectives of security of supply, environmental protection and competitiveness. Energy is the principle cause of man-made carbon dioxide emissions and energy research can make a significant contribution to reducing greenhouse gas emissions and reducing fossil fuel demand.

[4] The 34,205MW installed in the EU by the end of 2004 will, in an average wind year, produce some 73 TWh of electricity. Wind power installed in Europe today is already saving tens of millions of tonnes of CO_2 a year.

A strong research base for energy, environmental and climate technologies can offer a significant opportunity for the European industry to develop new technologies. It can bring wider benefits to the European economy by putting the EU in the forefront of industrial development. European society can also benefit from the fruits of energy research. A better link between energy policy and environmental and research policies will reinforce the objectives set out in the Kyoto Protocol and the goals of the Lisbon Strategy. Europe's ability to convince the developing world to address climate change will depend on our ability to demonstrate that technology exists or can be developed with a view to controlling emissions, while enabling growth and higher standards of living. .

Experience in the current Research and Technological Development Framework Programme shows the potential for major cross-border research and demonstration projects which bridge the gap between success in the laboratory and wide deployment in the market. Clean coal technology and low emission vehicle technologies can reduce the consumption of conventional energies and reduce emissions from their use. Renewable energy projects can improve the performance and competitiveness of renewable energies and their integration into society and thus contribute to more secure and sustainable energy supplies. Research into hydrogen and nuclear fusion, such as the international ITER[5] project) may open up new vistas for tomorrow's energy supply. The development of carbon sequestration could lead to the removal of substantial volumes of CO_2 emissions. The EU Research and Technological Development Framework Programmes must open the way towards real progress in these important areas.

In addition to technology development, greater efforts are needed to bring new products to the marketplace and increase awareness about their advantages. This is the role of the Intelligent Energy Europe programme, which will be extended for the period 2007-2013. The new Intelligent Energy Agency will help to optimize the efficiency of this programme. Above all, Member States, local agencies and industry must take a pro-active role.

[5] International Thermonuclear Experimental Reactor

7. My next priority is to achieve a properly functioning internal market for gas and electricity for the benefit of all our citizens.

A competitive and well-regulated market is the best framework to ensure cost efficiency and technological innovation in energy production. It can serve both individuals and industry with better energy services, more employment and business opportunities and greater security of supply, not least through public service obligations. This in turn will enhance European competitiveness.

Enormous progress was made during the previous Commission in creating an internal electricity and gas market. These efforts are now showing important results. Real electricity prices, for example, are some 15% lower than when the European liberalization process began, even taking into account recent price rises. Furthermore, levels of customer switching – an imperfect but easily understood indication of the level of effective competition – increases on a year by year basis in most EU countries.

Yet Europe does not yet have a competitive European electricity and gas market, characterized by a level-playing field in all Member States. Indeed, the single energy market remains still segmented by national borders, as internal trade is hindered by limitations in infrastructure, dominant positions and various regulatory barriers. Some Member States have highly developed markets, while in others progress has been slower. My immediate priority is therefore to ensure that the measures which have been adopted are correctly implemented.

As the recent benchmarking report on the functioning of the internal market[6] concluded, governments need to step up efforts to implement the market opening measures in the gas and electricity directives. Only greater integration of national markets can bring the required improvements to competition in the energy internal market.

To address this, the first task is to make sure that all Member States fully implement the existing *acquis*. At the beginning of 2005, infringement procedures were launched against ten Member States which had not yet implemented the second electricity and gas package.

During this year the Commission will be examining carefully how the single

[6] Annual Report on the Implementation of the Gas and Electricity Internal Market COM(2004) 863

market Directives have been implemented, and their concrete effects on the market. In particular, we need to consider whether markets are integrating, or remain national in scope. The Commission's report will cover regulatory issues and competition matters. Thus, at the end of this year, we will be able to have a really complete picture on the state of play of the European gas and electricity markets. Depending on the conclusions of that report and the recent benchmarking report, we will assess the need for additional measures to improve the functioning of the market.

One area which we will study is whether there is a sufficient level of investments in interconnectors. Another question is whether full independence of transmission system operators and an adequate level of separation of distribution system operators have been fully achieved in all instances. National governments have an active role to play in promoting each of these objectives.

In addition, we will need to avoid distortions resulting from access to nuclear decommissioning funds for purposes other than decommissioning. The Commission will be therefore preparing a recommendation on the question of the availability, transparency and management of financial resources earmarked for the decommissioning of nuclear power plants.

The impact of the new market on prices is uncertain. Competition has brought prices down in some parts of the EU. At the same time, rising fuel input prices put pressure on costs, and the new emissions trading, if it works effectively, is bound to feed into prices. Under any scenario, a properly functioning competitive energy market should lead to more competitive energy prices. If lower prices result, it might reduce the incentive to reduce energy demand, which runs contrary to our underlying objectives. This makes it all the more important that energy efficiency is given due priority in the internal energy market. This is one of the principal goals of the draft directive on energy services. We must also exploit the opportunities of the emissions trading system to stimulate energy efficiency and the use of renewable energy.

The impact of the new framework on investments must also be studied. Perceptions of price trends could also affect investment. The energy sector will need considerable levels of investment in coming years if it is to cope with the multiple challenges of ageing plant, rises in demand, environmental legislation and the need for new pipeline and other infrastructure. It is estimated that the EU energy sector will need investment of $2.1 trillion

between 2001 and 2030[7], of which 65% would be for electricity supply. The Commission is playing a role in improving energy transport across and into the EU through its Trans-European Network programme for energy. However, the real investment decisions fall to industry and financial institutions.

A well functioning market in the EU can help to bring stability to neighboring areas. We have already seen this in South East Europe, where the recent agreement to institute a South East Europe Energy Community by the summer could mark a new start in the political and economic history of this region. Politically, enhanced cooperation among the countries in this region will foster the conditions for peace, stability and growth. Economically, the agreement establishes an integrated market in natural gas and electricity, based on common solidarity.

The idea is that the Energy Community will provide a stable regulatory framework on the basis of which connections to the Caspian, North African and Middle East gas reserves can be developed and local reserves of gas and coal can be exploited. As the Treaty for a European Coal and Steel Community demonstrated in post-war Europe, an integrated energy community can be a vehicle for political, social and economic security. It will help to create the right conditions for attracting investment in much needed areas, notably in power generation and transmission networks.

8. My fifth priority is to strengthen nuclear safety and security.

Although the EU has had a legal base for the development of safe and secure nuclear energy for almost 50 years, under the Euratom Treaty, we do not yet have a proper legal nuclear safety framework. This weakness must be addressed.

There are now 13 Member States generating nuclear electricity and many more countries consuming nuclear electricity. One third of our electricity is nuclear generated, and the nuclear park of the European Union is aging. We need to work ever more closely together to assure people that nuclear is used with the highest level of safety throughout the Union and that arrangements will be made to dispose of hazardous waste. This was a major driving force behind the preparation of the Commission's "nuclear package", now on the Energy Council's table.

[7] World Energy Investment Outlook, IEA, 2004

To this end, the Commission proposed that Member States should report regularly on all aspects of nuclear safety in their country. These reports could then be "peer reviewed" by nuclear regulators from the other Member States. A second proposed directive would address weaknesses in arrangements for the long-term management and disposal of high-level waste. Such wastes have been produced in the European Union for nearly half a century – but in most Member States no permanent solution for storage has been decided upon. This is not only true in the EU, it is generally the case throughout the world. One approach the Commission is considering is to create a joint EU undertaking to research these issues and develop solutions. Here is another opportunity for Europe once again to provide leadership for the rest of the world.

9. My final priority is to further develop external energy policy relations.

As one of the largest energy importers of the world, it is of particular importance for the EU to have close and constructive relations with the rest of the world. This means not only producing countries, on whom we are increasingly reliant for our energy supply. It also includes other energy consumers from the developed and developing world. The EU energy security depends to a growing degree on the success of our relations with other consumers and producers across the globe.

As the largest producer of fossil fuels and uranium, Russia is an important partner for the EU, providing one third of our oil imports, and half of our gas imports. Cooperation has already been established within the framework of the EU-Russia Energy Dialogue. Launched at the EU-Russia summit in 2000, this dialogue has developed into a truly mutual partnership. It has provided a framework for discussions on a whole range of energy issues, described in recent Commission reports[8]. It has also opened the way to European investment in the Russian energy market and provided a forum for tackling difficulties faced by Russian companies when trying to enter the European single market.

Differences between the two parties regarding the territoriality clauses in supply contracts, and restrictions on the import of gas and petrol were dealt

[8] EU-Russia Energy Dialogue - Fifth Progress Report, November 2004
Communication from the Commission to the Council and the European Parliament: The energy Dialogue between the European Union and the Russian Federation between 2000-2004 COM(2004) 777 final

with in this framework. This included the preservation of long-term contracts for the supply of gas, an important factor in the security of supply, and the deletion of measures that went against EU competition rules.

Today, it offers the prospect of going beyond the narrow questions of energy products and extending to problems related to energy efficiency, transport and the environmental impact of the energy sector. For example, the Russian Federation has increased its controls on oil tankers and backed efforts by the EU to get international backing for similar measures through the International Maritime Organization. Current negotiations regarding linking Galileo and Glonass, the Russian Global Orbiting Navigation Satellite System, will also strengthen the security of transport infrastructure.

In the future, the Commission intends to build up co-operation on energy efficiency and technology transfer, following the Russian ratification of the Kyoto Protocol. We must also support reform of the energy sector in Russia and explore ways of promoting and protecting investments. It is also in our mutual interest to study alternative routes for energy imports into the EU from Russia, preferable across land via pipeline and rail, as opposed to maritime. Ultimately, the Commission's goal is to work towards the creation of a pan-European market in gas and electricity.

The EU-Russia energy dialogue is very effective and worthwhile experience through which the EU can further develop its relations in the energy field with Russia. It could also serve as a model for similar dialogue with other energy–producing countries.

The other major partner in our energy supply is OPEC. The role of OPEC in our energy supply is forecast to rise, as oil and gas reserves in the North Sea and other parts of the world dwindle and demand rises. Above all, two important principles constitute the basis for the dialogue with OPEC: both the EU and OPEC have an interest in stable prices; and dialogue is important whatever the state of markets or the level of prices.

I would like to develop these relations further, by formalizing our dialogue with OPEC. We are also negotiating a free trade agreement with the Gulf Cooperation Council, a grouping of oil and gas producers around the Persian Gulf. At the same time, our energy relations with the Maghreb are progressing. New initiatives with gas producers are particularly timely in the light of rising demand for gas in electricity generation and declining domestic production. The extension of the single energy market to South

East Europe is also a positive development for energy security in the EU.

Finally, we should not forget the impact which energy policies in other consuming countries have on our own energy security, and on the prices which we pay for our raw fuel. Rising demand for oil and gas has turned countries such as China and India from being more or less self-sufficient in energy, to large energy importers. Energy consumption per capita in China today is approximately 14 times lower than that in the United States and 7 times lower than in the EU. Consumption per capita in India is half that of China. If India and China were to increase consumption levels to just half the EU levels, or one quarter of US levels by 2025, this would represent an increased energy demand of an equivalent of 45 million barrels of oil per day; more than the present combined US and EU oil consumption today.

As well as undermining our own security of supply and price stability, rising global energy use brings other consequences. Environmental concerns have been forced into second place as governments have sought to satisfy the demand for energy which is necessary to fuel economic growth. We also have a situation where Chinese, Indian and South American companies are in direct competition with European firms in the competition for international supply contracts and drilling licenses. These are new challenges, which require a new international agenda.

10. Conclusion

The success of any strategy rests in maintaining a strong political will to confront the challenges ahead – among Member State governments, local authorities, business and individuals. Today's citizens consider stable, sustainable and affordable supplies to be a right. But it can only happen if every single individual recognizes the responsibilities which come with being an energy consumer – to use energy wisely, to avoid wastage and to use the cleanest energy available. This is the challenge facing every single individual today.