



**Union of the Electricity Industry – EURELECTRIC
Position Paper
in response to the Green Paper of the European Commission :
“Towards a European Strategy for the Security of Energy Supply”**

June 2001

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With input from the Working Groups "Energy Policy", "Prospectives", "Nuclear", and from Domain B "Environment & Sustainable Development".

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The Union of the Electricity Industry - EURELECTRIC, formed as a result of a merger in December 1999 of the twin Electricity Industry Associations, UNIPEDE and EURELECTRIC, is the sector association representing the common interests of the European Electricity Industry and its worldwide affiliates and associates. Its mission is to contribute to the development and competitiveness of the Electricity Industry and to promote the role of electricity in the advancement of society.

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

Executive Summary

EURELECTRIC welcomes the Commission’s Green Paper – the first major discussion paper on energy policy for some years.

Concerning the core issue, growing import dependence (Question 1), EURELECTRIC accepts this as a fact of some concern. Nevertheless, dependence is not something to be avoided at all costs, nor does it justify a weighty framework policy for imports, and certainly not a largely centralised one.

The electricity sector is somewhat less dependent on imports than the general economy. This is no basis for complacency, but given an appropriate regulatory framework, EURELECTRIC believes the electricity industry (EI) itself can indeed manage the issue.

A key part of the solution is maintaining diversity in the widest sense, that is, taking into account both the demand and supply sides, fuel sources, energy suppliers, power technologies, etc. EURELECTRIC sees the main role for the Commission in

- ensuring effective functioning of the IEM, harmonisation of the conditions for competition and avoidance of distortions. Even in meeting environmental commitments (primarily Kyoto), which EURELECTRIC takes very seriously, market solutions must be paramount
- keeping open all energy options (technologies and sources)
- skillful management of the geopolitical agenda, representing effectively European interests, as for example in relation to increasing competition upstream in gas.

Accordingly, EURELECTRIC agrees (cf. Question 2) that co-ordination by the Commission is required to ensure effective implementation and functioning of liberalised electricity and gas markets; however, EURELECTRIC believes that energy policy choices must always be left to the Member States. Indeed, there is a benefit in maintaining diverse choices.

Regarding Question 3 (tax and State Aid), EURELECTRIC believes market mechanisms (such as emission trading or green certificates) are always preferable, and state mandated aid should not be used as a means of obliging some market actors to subsidise others. Of course, taxes and “real” State Aid can create IEM distortions.

Concerning the management of energy reserves (Question 5), EURELECTRIC does not believe that additional measures or indeed additional stockpiles are necessary. Strategic energy reserves should primarily be managed nationally and within existing arrangements in the IEA. Question 6 (energy transport) correctly identifies that the electricity sector needs continual heavy investment, which must be facilitated.

In relation to renewables (RES – Question 7), EURELECTRIC believes that greater penetration of RES is possible, and is a valid objective, but the proposal in the Green Paper for “co-financing” by “other energies” meaning the market actors, is against fair market principles and is therefore unacceptable. Furthermore, harmonisation of the existing divergent support schemes is becoming increasingly important to eliminate growing distortions in the IEM.

Concerning nuclear power (Question 8), EURELECTRIC believes that realistically, the EU cannot meet its Kyoto targets without nuclear energy. Along with hydropower, nuclear energy is the only large-scale CO₂-free option for electricity generation. We further believe that in view of its positive role in reducing EU GHG emissions, political support is needed to overcome the low public awareness of basic nuclear energy facts, which impacts strongly on acceptance.

Nuclear power also contributes significantly to Europe’s security of supply, due to the wide physical availability of uranium, and the real lack of any significant fuel price risk. Regarding nuclear waste and final waste storage, there clearly is an unresolved challenge over long-term storage but it is one of political decision-making and of communication, not a “problem” of technology or economics.

Whatever about fulfilling Europe’s near-term obligations under the Kyoto Protocol (Question 9), it is clear that climate change and the control and reduction of GHG emissions are long-term issues and very challenging. Objectives should be defined in realistic terms bearing in mind the lead times and costs for their fulfilment. Proposed policies and measures must be consistent, not contradictory. Market solutions must be paramount. The Commission should play an active role in developing a well-designed framework for tradable emission certificates and facilitating the development of an EU market for RES certificates. A portfolio of (partial) solutions is required, and of course, is available. Member States must be free to decide where they place the emphasis, having regard to minimising the significant economic costs of compliance.

Concerning the very important demand side (Questions 11 & 12), EURELECTRIC agrees that energy efficiency measures here do have a role to play. We support improvements in building standards and would advocate a meaningful targeted reduction in emissions from transport. It is a fine judgement not to overestimate the probable contribution of demand side measures in practice, nevertheless efforts are needed. Greater penetration of electrotechnologies, energy saving commercial services, customer information and incentives can and do make a significant contribution in improving energy efficiency.

Security of supply, climate change and energy needs are long-term subjects (Question 13). The best way to find a solution is to open and continue a dispassionate debate about all available energy options. The “Shared Analysis” exercise carried out for the preparation of the “European Union Energy Outlook to 2020” is an example of a successful collaborative exercise on defining future policies for energy.

EURELECTRIC is interested to continue such collaboration. EURELECTRIC supports co-operation among the Member States in setting common goals and sharing of global targets. However, decisions regarding the route and options for achieving these targets should be left to subsidiarity within a framework of competitive markets and market instruments.

EURELECTRIC Position Paper in response to the Green Paper

Introduction

EURELECTRIC welcomes the Green Paper of the European Commission, the first general energy policy document at European level for several years. Since the previous White Paper of the Commission, liberalisation has taken place to a significant degree in the electricity market and is beginning in the gas market. The Kyoto Protocol has been signed, and on ratification, the EU and individual Member States will be committed to significant reductions of greenhouse gases by 2008-2012, despite significant economic growth.

Liberalisation and Kyoto are the two major framing conditions, defining the rules in which market actors must already operate. EURELECTRIC welcomes liberalisation and we accept the challenge of Kyoto.

The energy sector as a whole is enormous and permeates all human economic activity. Therefore, it is not surprising that public authorities are also concerned with issues such as the geopolitics of import dependency and security of supply. But in addressing all these concerns, EURELECTRIC believes that the key issue is obtaining a proper balance of policies.

As well as coherence among objectives and policy choices, the economic impacts of all (new) policies must be considered, as well as other impacts. Over-regulation must be avoided, in the widest sense of all pertaining policies and measures, and existing and proposed new instruments. If new measures are proposed arising from concerns and objectives additional to those already established, the possible dangers include economic damage to parts of the energy sector (which would have repercussions on consumers), and/or failure to meet or fully meet objectives which are at least in part, conflicting.

EURELECTRIC unequivocally supports full liberalisation of electricity and gas markets. The gas market should of course be liberalised in parallel with electricity to achieve all the benefits. Evidence suggests that liberalisation has not impacted adversely to date on standards of service in electricity. *Secure* electricity supply is an important part of service quality. However, security of electricity supply *per se* is not deeply addressed in the Green Paper. But this is not a criticism, as EURELECTRIC is convinced that the sector can indeed manage this issue as it has done in the past, provided the appropriate regulatory framework (fair, and light) is in place. A number of things are required to underpin it, including harmonisation and facilitation of necessary investments to add needed capacity and clear network bottlenecks. Market opening has generally reduced reserve margins. Nevertheless, reserve capacity should be economically compensated through market mechanisms.

Secure electricity supply and fulfilment of Kyoto commitments can only be ensured by financially healthy companies that are able to attract necessary finance and shareholders

funds. Thus, sustaining the competitiveness of electricity and gas companies should be one of the objectives. This implies great care in introducing new burdens, and also in maximising the choice available to comply with existing regulations and objectives.

Responses to the Commission's 13 Questions

In the Green Paper, the Commission indicates its wish to structure the debate around 13 key questions. EURELECTRIC is pleased therefore to present its responses to these "13 Questions". Please note shorthand versions of the Commission's questions are given here, for brevity. EURELECTRIC's responses, however, address the original questions.

1. External energy dependence

EURELECTRIC believes European energy import dependency (also for c. 30 countries in 2020) is to be accepted *de facto*. Physical shortages are not the main issue. The response to import dependency should be driven by economic principles, within the framework of world and regional trade agreements. The key factor is diversity of fuels, fuel sources, technologies and suppliers so that risks can be managed. This approach will yield a flexible energy system well fitted to reconcile energy dependence with EU competitiveness. It also reduces the incentive for politically motivated interruptions.

EURELECTRIC notes that the European Commission recognises that "security of supply" does not mean the maximisation of energy self-sufficiency or the minimisation of import dependence, but aims to reduce the risks of such dependence, emphasising the diversification of energy sources and fuels and the need of reaching agreements with exporting countries in order to ensure long-term energy supplies.

Furthermore, liberalisation of the energy market in the Community favours enhanced security of energy supply provided that the liberalisation process is not hampered and distorted by re-regulation. In stable, well-structured markets, market players take account of the long term as well as the short term.

There exists a clear but limited role for the European Commission (complementary to that of MS governments) to maintain good relations with energy-producing countries and transit countries. (This is in addition to the central and critical role of the Commission to ensure a rapid and consistent liberalisation of Community energy markets in line with the existing and proposed Directives.) A framework policy for imports is not necessary. It is more important to pursue a strategy based on diversity of fuels and supply sources, combined with a strategy for promoting energy efficiency on the demand side.

Price risk stands out as a key security of supply concern. While coal and nuclear do not face any large price risks, oil and gas are known for price volatility (with gas prices still index-linked to oil prices). Import pipeline capacity and investment costs will be key determinants, along with the market power of external suppliers and pipeline operators. Therefore, in parallel with opening EU gas markets, EU gas policy should focus on obtaining competition and liberalised markets upstream also, i.e. in non-EU supplier countries.

Note: EURELECTRIC's own central projections of the European energy situation to 2020 are as follows:

- Growing energy demand (0.7%pa) mainly due to economic growth.(2.2%pa)
- Electricity demand expected to grow by 1.4% pa.
- Transport demand expected to show fastest rate of energy growth.
- Gas will see fastest rate of growth of fuel demand over the next 20 years.
- Europe will indeed increasingly rely on imported fuels, gas and oil, for its energy. But as regards the electricity sector, dependence on imported fuels will be lower than for other energy sectors.
- Basic availability of adequate physical gas reserves is not considered a problem; the issue will be whether adequate volumes and capacity will be delivered securely to Europe and at what price.

2. IEM needs consistent and co-ordinated energy policy at Community level?

EURELECTRIC believes it is very important to identify correctly the policy areas where co-ordination is necessary and justified, and where issues should be left to subsidiarity (the Member States) or to the market.

Co-ordination led by the Commission is required to ensure effective joint implementation and functioning of liberalised electricity and gas markets. This includes addressing common issues (such as public acceptance of power lines and plants) to facilitate a positive climate for investments. Investments, and the ability to attract needed company finance, are key to long-term security of supply, in both electricity and gas. Lastly, harmonisation is required to avoid economic distortions in the IEM, for example harmonisation concerning environmental standards, not only within the existing Community, but also including the Accession countries.

Environmental policies are already strongly co-ordinated EU-wide. EURELECTRIC believes that all policy proposals impacting on the sector must be internally coherent and their economic impact measured and understood, including the impact on security of supply. In some cases environmental objectives and policies can impact negatively on security of supply, e.g. by restricting the construction of new power stations and transmission lines.

EURELECTRIC considers that in the final analysis energy policy choices are best left to the Member States. Member States differ very greatly in terms of their import dependency, energy resources (types and scale) and their location vis-a-vis external suppliers. Thus there is no clear role for a co-ordinated energy policy. On the contrary, EURELECTRIC believes that there is a positive benefit in continuing with the diversity of MS policies which lead *de facto* to a reduction in energy "portfolio risk" for Europe as a whole. An overly centralised determination of the fuel mix, for instance, could make Europe much more vulnerable to changing market conditions or unforeseen crises. Similarly, central coordination of investments (or quasi-coordination) adds no value but runs the risk of "getting it wrong" spectacularly.

The following table illustrates EURELECTRIC's view of an appropriate allocation of roles among the European institutions, national governments and market players.

EU Role	Member States' Role	Role of the market
<u>Security of Supply</u> ST: Limited role, e.g. seek upstream gas competition LT: Geopolitical role, in agreement with MSs	ST: (e.g. oil) through IEA LT: framework for energy choices and facilitate investments	ST: fuel switching/ interruptible contracts LT: investments
<u>Liberalisation/IEM</u> Police the IEM and ensure rapid & consistent liberalisation	Implement Electricity and Gas Directives Ensure respect of national market opening	Operate according to market rules and market principles.
<u>Investments</u> Facilitative: ensure a positive investment climate, addressing barriers to needed investments.	Facilitative: ensure a positive investment climate, addressing barriers to needed investments	Decide investment choices in line with market situation and prospects
<u>Regulation</u> <ul style="list-style-type: none"> • Coherent with IEM • Pro-market to ensure financing • Market mechanisms to achieve desired results • By exception/minimal • Regulation of the use of interconnections to achieve the single market 	<ul style="list-style-type: none"> • Coherent with IEM • Pro-market to ensure financing • Market mechanisms to achieve desired results • By exception/minimal 	<ul style="list-style-type: none"> • Can satisfy many objectives given a stable framework • Requires coherence of objectives
<u>Environment/ Kyoto</u> Co-ordinate agreements on targets /burden sharing (policies & measures – PAM). Public info campaign Early introduction of a European emission trading scheme	Select means to ensure achievement Sign up to a European emission trading scheme and facilitate participation of market actors	Optimise investment choices or alternatives (cf. emissions trading)
<u>R&D</u> <ul style="list-style-type: none"> • Promotion of joint projects at EU level • Provision of public funds • Prepare for post-Kyoto: RES, energy efficiency, and all technologies for zero, low , or lowered CO2, or CO2 capture 	<ul style="list-style-type: none"> • Promotion of projects at State level • Provision of public funds • Develop policies to deal with more stringent GHG emission reductions 	<ul style="list-style-type: none"> • Selection of objectives and alternatives • Provision of private funds • Enhance the contribution of competitive low CO2 or CO2-free energies
<u>Harmonised RES support</u> <ul style="list-style-type: none"> • Development of European market for RES now timely • Commission should facilitate convergence 	<ul style="list-style-type: none"> • Adapt support schemes towards international compatibility 	<ul style="list-style-type: none"> • Utilise the opportunities created

<u>Reserve stocks</u> Min: Zero Max: Co-ordinate basic principles.	Joint management of Reserves (also through IEA)	Manage own reserve supplies or alternative solutions through economic optimisation.
<u>TENS</u> <ul style="list-style-type: none"> • Promotion of network development of European interest • Promotion of interconnections with neighbouring countries • Promotion of interoperability of networks 	<ul style="list-style-type: none"> • Promotion of domestic network development in coherence with TENS 	<ul style="list-style-type: none"> • Investment choices • Develop the electricity infrastructure

3. Energy taxation, EU competitiveness, energy & environmental objectives
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The GP calls for a more harmonised EC framework of taxation on energy products in order to prevent distortion of competition. The value of taxation measures is highlighted as a means to control demand for environmental reasons and to tax polluting fossil fuels.

EURELECTRIC reiterates its opinion that taxes (and excessive subsidies) can distort the IEM and undermine EU competitiveness *vis-à-vis* other world regions. **Market mechanisms** (e.g. emissions trading and trading of green certificates) are invariably preferable to fiscal measures. This is consistent with the observation that a tax, even where it has a *bona fide* energy or environment related objective, sets only the price and not the “quantity” of the objective that is satisfied. On the other hand, market mechanisms generally can be designed to guarantee compliance. The market determines the price for compliance. Market mechanisms are consistent with and more easily incorporated into the single energy market. Also, many Member States have had good experience with negotiated agreements, which allow a more efficient allocation of financial resources.

Taxes certainly can be an obstacle to EU competitiveness. Therefore, environmental taxes should never be introduced simply as a means for revenue raising. As a matter of principle, where they exist they should reflect only the actual environmental impact of each energy source, and the revenues raised should be used directly for mitigating the perceived environmental problem. Harmonisation could be possible, but should be towards the lowest levels, to protect EU competitiveness. In this case, attention could also be paid to a harmonisation of environmental standards.

The principle of **internalisation of external costs** should theoretically facilitate a more sustainable choice among different energy sources. But methodologies for quantifying and evaluating external costs need to be more developed before they can be used reliably. In any case, they can be used only as **a guide for action**. Further, it should be recognised that important “external” costs for electricity plants are in fact already internalised, ranging from investments to meet nuclear safety standards to retrofitting of expensive FGD or low NOx burners, etc.

The treatment of state aids should not be on an *ad hoc* case-by-case basis. State aids supporting technologies or plants that are already mature and competitive within the limits of reasonable use should be terminated.

4. Relations with producer countries, Russia in particular. How to guarantee stable prices and investments?

The Commission has a geopolitical role to play in representing Europe's interests. Its aim must be to enhance our relationship with producer countries such that energy supply is not used as a political lever.

Dialogue with producer and transit countries should promote the mutual benefits of free trade and technology transfer. It should pursue the development of free market conditions and free trade agreements, the creation of independent competition authorities, and agreement on common environmental and security standards as far as possible. Establishment of a framework for JI/CDM projects with these countries will favour a co-operative climate. Agreements with such countries should be promoted to secure the necessary investments to improve (a) the energy supply to EU countries and (b) the safety and environmental standards of installations in exporting countries. However, detailed trade transactions should be left to commercial contracts and market forces.

The Green Paper lays a heavy emphasis on Russia as a gas supplier. In this regard, EURELECTRIC views the EU-Russia dialogue positively as a contribution to building mutual trust. If trade between Russia and the EU is to be expanded, it is important that a legal framework supporting a favourable investment climate should be in place and that progress is made towards liberalising the Russian energy sector. Ratification by Russia of the Energy Charter Treaty is clearly an important step in this process. The future Energy Transit Protocol (presently being negotiated) holds promise as a safeguard of energy products supplied to the buyer via the networks of a third country. In the longer term, Russian resources are unlikely to be available exclusively for Europe. Increased domestic demand in Russia and the opening of Asian markets will lay new claims to Russian gas.

Consequently, and notwithstanding the importance of Russia, sufficient attention must be paid also to other supplier regions, such as North Africa or former Soviet states like Kazakhstan or Turkmenistan. North Africa will grow in importance as a gas supplier, especially if Spain and Algeria's plans to construct a second pipeline to Spain materialise. A preference for any supplier will be determined as a result of an economic analysis, as well as assessing the political risk.

5. Stockpiling and management of strategic reserves: oil - gas & coal? Community role?

Strategic energy reserves should primarily be managed nationally and within existing arrangements in the IEA. However, the EU and the IEA could jointly examine the required levels and managing principles for energy reserves. It is important that the management of reserves recognises the liberalisation of energy markets and that any

interference with market drivers for holding inventories can lead to distortions and inefficiencies in resource allocation. Thus, market mechanisms should also apply to the satisfaction of reserve requirements. It is important also that the management of reserve stocks does not distort the fuel market under normal conditions. EC legislation should allow national financing arrangements in which companies could maintain fuel and generation capacity reserves and obtain fair compensation from public funds.

As regards the stockpiling of different fuels, the existing EU arrangements for oil stocks appear to be adequate. Gas storage is expensive and a European physical gas shortage is hard to envisage, as confirmed in the Commission's Communication on the Security of Gas Supply (COM/99/571/final). Except in the most extreme cases of disruption, existing national storage facilities are adequate and are normally complemented by production swing capacity. It is important to secure competitive access to gas storage throughout the EU in order to optimise the use of existing facilities.

The option of LNG is very promising to transform gas into a global fuel rather than solely a regional fuel tied to pipeline networks. It deserves further development. At present, coal-stock requirements are not needed due to the existence of an international and diversified market and existing arrangements at national level. Uranium is stored in Europe in high energy volumes taking up very little physical space and EURELECTRIC does not believe that any additional measures are required in this area.

The electricity industry has developed its own standards and practices for reserve holding and stockpiling. Under liberalisation and new trading arrangements, these practices will be reviewed to reflect market opportunities, contracts and statutory duties to balance the system. For electricity, reserves also refer to capacity reserve margin. In strategic terms, sufficient electrical interconnection among Member States can serve as a useful partial substitute for local reserves of fuel or power capacity. Additionally, by facilitating the authorisation, construction and operation of new electricity generation it will be possible to improve the security of energy supply. In any case, market mechanisms are necessary to ensure adequate economic compensation for reserve capacity, avoiding the closure of an excessive number of low operating plants.

6. Energy transport networks in EU and neighbouring countries, for IEM functioning and security of supply.

EURELECTRIC believes that electricity networks and in particular interconnectors provide the means to facilitate trade, the unification of markets and greater competition. They are also central to enhancing the penetration of RES-E (renewable electricity). The development and more efficient operation of energy transport networks can be ensured by promoting organisational frameworks that identify common interests between the owners and operators of such networks, with non-discriminatory access to networks for all users within an independent regulatory framework.

Network owners and operators must be incentivised to develop and maintain their networks. They and the public authorities including the Commission need to work together to address constraints such as public acceptance and health concerns like EMF. The need for transportation networks should be taken into account when plans for land use are prepared.

Regarding interconnections with neighbouring countries, it is important to ensure that energy products flow smoothly from supplier to buyer. For electricity, technical conditions need to be respected to prevent a frequency imbalance. Certain political hurdles (again, a question of public acceptance) need to be overcome in order to eliminate the present bottlenecks and lack of interconnections. Legal protection must be ensured to secure the recovery of investments while providing objective, transparent and non-discriminatory access to infrastructure based on market rules and guaranteeing cost-reflective transmission tariffs. Thus the legal framework must underpin economic incentives for investment and maintenance by network owners and operators.

With specific reference to the electricity industry, immediate attention needs to be paid to resolving the issue of cross-border tariffs. Implementing fair TPA in all Member States and resolving congestion management issues will help to improve the efficient operation of the existing network as well as the functioning of the internal market. Co-ordination and co-operation among electricity pools and between these pools and TSOs could also be strengthened.

In the case of gas, it is important that transparent and non-discriminatory transmission charges are established. Some technical and quality harmonisation would stimulate increased trading, along with better access to network services such as storage. Consideration needs to be given to fair access to transit pipelines through non-EU countries (such pipelines may often be part owned by EU companies). If transit is not allowed at reasonable rates, this will de facto limit market opening inside the EU. Agreements with transit countries to liberalise pipeline access are therefore desirable.

7. RES development: support for RTD, investment and operational aid. Should RES be co-financed by gas, oil, nuclear?

EURELECTRIC firmly supports the development of RES. Many of our firms are significantly involved in this area. However, EURELECTRIC is strongly against cross-subsidies as these tend to distort markets and lead to an inefficient allocation of scarce resources, as well as running counter to the spirit of liberalisation and the internal market. Development of RES should not be financed by imposing costs on the conventional energy sector (gas, oil, nuclear). One market actor should not be expected to subsidise another. But the reality of “co-financing” as described in the Green Paper, would in fact be to transfer funds from some market actors to others, rather than the implied painless financial support of one “energy source” by “other sources”.

This question is important since RES enter the energy market mainly in the form of RES electricity (RES-E). RES-E installations are generally not yet competitive whereas their promotion is taking place at a time of electricity market liberalisation. In this context, EURELECTRIC supports the Commission’s efforts on harmonising support schemes for RES within the EU. Promotion schemes should focus on internal competition, cost reduction, no discrimination among actors, and minimal bureaucracy. Support should be limited in time, and windfall profits must be excluded. Market-based instruments like certification schemes or bidding systems should be the preferred means.

The underlying purpose for supporting RES is to secure societal benefits including environmental protection, development of European manufacturing niches, and employment in rural areas. Accordingly, society (ideally in the form of taxpayers or all energy consumers) should finance the additional costs associated with RES. This is true in the first instance where R&D aid is concerned.

In any case, energy R&D support should clearly not be restricted to RES and efficient technologies. Account must be taken of the need for fuel diversity, and global energy requirements in the 21st century, including 2 billion people without electricity and huge growth in electrification in countries like China and India. Therefore, R&D support must also be given to other technologies, such as European advanced gas turbines, the European EPR and maintaining top-level European nuclear expertise, clean coal technologies, carbon sequestration, etc.

8. Nuclear energy: one element in tackling climate change and energy autonomy. What Community solutions to nuclear waste, nuclear safety and R&D?
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EURELECTRIC welcomes the supportive comments in the Green Paper, in particular the proposal to analyse the contribution of nuclear energy to EU security of supply, giving due consideration to “the fight against global warming, ... and sustainable development”. EURELECTRIC welcomes also the paper’s recommendation that research on waste management technologies and their implementation should go ahead. We fully agree too that the EU must retain its leading position in the field of civil nuclear technology.

However, the nuclear option is not treated very consistently in the Paper. Elsewhere there are negative or reserved remarks, and suggestions that do not stand up well to closer inspection. EURELECTRIC would welcome efforts by the Commission to enhance public understanding of nuclear power and role it actually plays.

Nuclear energy provides 35% of EU electricity, without producing CO₂. Nuclear plants are very competitive in baseload operation. Their competitiveness is not based solely on life extensions as seems to be suggested, but also on stable prices and their world class technology. EURELECTRIC believes the value of maintaining a significant proportion of nuclear energy will become more evident in the long-term. Market actors and others in several countries share this view, including in Finland, France, UK, Romania, the Czech Republic, US, Japan, and Russia.

In view of its positive role in reducing overall EU GHG emissions, political support is needed to overcome the low public awareness of basic nuclear energy facts, which impacts strongly on acceptance. A more explicit acknowledgement could be made of nuclear energy’s role in the Community effort to fulfil climate change targets while maintaining energy security.

Realistically, the EU cannot meet its Kyoto targets without nuclear energy. Equally, its scale is such that in the unlikely event of a total withdrawal from nuclear, Europe’s energy dependence would necessarily increase significantly, particularly in the case of electricity. This could have a negative consequence on the competitiveness of the EU

economy and on its environment, especially if carbon-based fuels are resorted to as a substitute. Along with hydropower, nuclear energy is the only CO₂-free large-scale option for electricity generation that is also economically viable in the IEM without subsidies.

The EU's track record as far as nuclear safety is concerned is excellent. Harmonisation of safety rules is also necessary. It should be extended to EU candidate countries and included in the dialogue with other (eastern) countries. For safety (technology transfer) and environmental reasons, nuclear energy as well as large hydro plant should not be excluded from the Flexibility Mechanisms of the Kyoto Protocol.

Regarding **nuclear waste**, EURELECTRIC considers it is misleading to talk of the "problem" of nuclear waste. As described in a recent EURELECTRIC Workshop, there is clearly an unresolved *challenge* over long-term storage but it is one of political decision-making and of public acceptance, not an unresolved problem of technology or economics. Realistically, there is adequate time to resolve this, in part through better communication of the issues to European publics. Already today, safe management of radioactive waste is the reality. Nuclear waste is managed properly, and several countries have prepared detailed proposals for long-term storage. Decisions, as in Finland recently, are what is now required on the choice of long-term storage solution. The Commission can contribute to the necessary communication efforts in conjunction with other stakeholders.

EURELECTRIC would welcome further details of the calculation base for the figure of 312 mt per annum of CO₂ avoided – it is significantly lower than our estimate.

9. How to meet Kyoto? What measures for energy savings to reduce both external dependence and CO₂ emissions?

A portfolio of solutions is required. Member States must be free to decide where they place the emphasis, having regard to minimising the costs of compliance. Subsidiarity should be the norm provided that Member States do not distort competitive markets and cross-border trade.

The electricity industry is already making a significant contribution and will reinforce its efforts for a secure electricity supply and reduced CO₂-emissions through new applications in innovative energy efficient electrotechnologies on both supply side and demand side, in energy saving commercial services, and in the transport sector.

The full potential of clean power technologies in reducing emissions is not stressed enough in the GP. These technologies include hydropower and other RES, nuclear, clean coal and CCGT, as well as CO₂ sequestration and the development of alternative fuels. The impact of each is different. It is up to each Member State to select the most appropriate options.

Market solutions must be paramount. The Commission should play an active role in developing a well-designed emission trading system in an equitable and transparent manner. Similarly, the Commission could do much to facilitate development of an EU market for RES certificates. Long-term environmental agreements can also bear fruit.

In our view, the control and reduction of GHG emissions is a long-term issue, going well beyond the first Kyoto commitment period. The establishment of long-term objectives will contribute favourably towards the future energy policy framework and sustainable development of the EU. They must, however, be defined in realistic terms bearing in mind the lead times for their fulfilment.

EURELECTRIC in principle supports the Commission's efforts on the demand side. As the transport and building sectors are the main fossil fuel consumers and the main emitters of GHG in the Community, reducing energy demand in these sectors should have priority.

Electrotechnologies, energy saving commercial services, customer information and incentives can make a significant contribution in improving energy efficiency. Increased electricity penetration has long been associated with lower consumption of primary energy.

The use of electricity should be promoted where an improvement of global environmental impact can be achieved. EURELECTRIC has demonstrated in joint workshops with the Commission that electricity, by displacing other less efficient fuels, can contribute to an overall reduction in total primary energy requirements and therefore lower emissions.

In summary, EURELECTRIC recommends the development and adoption of a consistent, clear and stable view on the hierarchies and interactions between different policies and measures in order to create the clarity and the incentives needed for their application. In particular, the Commission should: -

- Ensure that policies and actions are based upon fairly distributed efforts from all sectors, including transport, all energy producers and consuming industry, and the domestic and agricultural sectors.
- Enable the early introduction of a well-designed emission trading scheme. The interconnected European electricity grids also extend beyond the bounds of the European Community, so that the Accession countries are already within the field of European electricity trade. Serious consideration should therefore be given to including the Accession countries within any European emissions trading system, which will also give additional incentives for investments in their energy systems.
- Accelerate the EU enlargement process in order to accelerate investments in the energy systems of Accession countries;
- Aim CHP policies at maximising real energy savings and obtaining high quality projects rather than maximising installed electrical capacity. Amend the statistics, objectives and support mechanisms accordingly;
- Make progress in the objective and dispassionate assessment of nuclear energy;
- Actively develop long-term negotiated agreements on energy efficiency and/or GHG control.

10. Biofuels and hydrogen: 20% of total consumption by 2020. Are decisions required on taxation, distribution and prospects for agricultural production?

Biofuels and other alternative fuels (hydrogen) can contribute to diversity of supply. However, producing biofuels can often be an inefficient and expensive process. Despite the claims in the Green Paper, biomass is a limited resource and labour-intensive. Although its physical potential is high, it has a much lower economic one. An increased use of biomass can induce higher costs for energy, and could reduce room for consumption in other parts of the economy. Biomass should be used in areas where it can give an optimal performance (*e.g.* in heat production in district heating systems). It can be applied to electricity generation but experience has highlighted the difficulty of providing a large amount of biomass to power plants on a continuous basis.

While biofuels will contribute to RES in the medium-term, a hydrogen economy is a longer-term prospect. The 20% target for the year 2020 is indeed very ambitious and would require major new infrastructure. As far as hydrogen is concerned, it should be recalled that it is not a naturally occurring fuel and that presently, the only process to generate it without co-production of CO₂ is electrolysis, which requires electricity. Moreover, natural gas rather than biofuels is the natural stepping stone to a hydrogen future.

Lastly, the promotion of biofuels and other substitute fuels should be based primarily on national programmes because the conditions for their usage vary to a large extent across the EU. Climatic factors are also another important variable. However, EU support for development and demonstration could be used to augment national initiatives.

11. Energy saving in buildings: taxation or regulatory measures required?

The electricity industry has always supported the efficient use of energy and has sponsored the application of energy efficient technologies and higher standards in the workplace and at home. Energy savings in buildings should be analysed in an integrated way taking into account both the building standards (insulation) and the energy equipment for heating and cooling (heat pumps and control systems).

Regarding the existing building stock, the promotion of energy service companies (ESCOs) may constitute a win-win solution in producing savings of money for consumers and business opportunities for the ESCOs themselves. Again, the public needs to be made aware to opt for energy saving methods automatically.

Given the specifics of the construction industry, the existing system of planning rules, and the long-lived nature of buildings versus the short term focus of occupants, EURELECTRIC believes that building regulations in the form of minimum energy efficiency standards for new construction are fully justified. However, standards should not be extreme or unrealistic nor should regulation go too far, such as mandatory requirements for choice of energy system, etc.

12. Transport sector: should corrective action be taken? How to open up the sector to competition, while promoting investment and inter-modality?

EURELECTRIC welcomes the Commission focus on the role of transport - the sector that has often been neglected when discussing measures against climate change, despite its growing contribution to CO₂ emissions. EURELECTRIC supports greater use of public transport and its electrification, where possible, to reduce local and national emissions. Electric propulsion is particularly suitable for rail transport and for road transport in urban areas. Any pressure on car use in urban areas must be matched with real improvements in public transport service. Actions could also target investments for intermodal freight transports. In any case, it should not be considered that foreseen growth in transport (and related growth in CO₂ emissions) is entirely unavoidable. On the contrary, a sizeable reduction from the “conventional wisdom” growth should be a definite target.

13. How to proceed/ collaborate and integrate the long-term so as to evolve sustainable energy supply? How prepare the energy options for the future?

Security of supply, climate change and energy needs are long-term subjects. The best way to find a solution is to open and continue a dispassionate debate about all available energy options. The diminishing role of the public sector in liberalised energy markets will involve the market actors more and more, including where security of supply is concerned.

The “Shared Analysis” exercise carried out for the preparation of the “European Union Energy Outlook to 2020” is an example of a successful collaborative exercise on defining future policies for energy. EURELECTRIC is interested to continue such collaboration.

It is clearly necessary now to involve fully the candidate countries as well as existing Member States.

One question that concerns EURELECTRIC is what should be the powers of the Commission to act? Should there be an energy Chapter in the next Treaty? EURELECTRIC supports the co-operation of Member States in setting common goals and sharing of global targets. However, decisions regarding the route and options to achieving these targets should be left to subsidiarity within a framework of competitive markets and market instruments.

In EURELECTRIC’s view, the key solutions for these major challenges comprise:

- A maximum focus on market solutions, also for Kyoto, RES, and CHP in particular;
- Growing imports certainly requires an approach which maximises upstream competition among imported fuel sources and suppliers;
- A continued significant focus on ongoing energy R&D, with a view to maintaining all energy options and continuous improvement of European ‘state-of-the-art’.
