

SUB587

26 November 2001
Our Ref: 122/402 (Sub587)

European Commission
Directorate-General for Energy & Transport
Mrs Nina Commeau
200, rue de la Loi
B-1049 Brussels
BELGIUM

Dear Mrs Commeau

IEE Response to EC Green Paper: 'Towards a European Strategy for the Security of Energy Supply'.

The IEE (Institution of Electrical Engineers) is pleased to be able to respond to the invitation to submit comments to the European Commission on this Green Paper.

A significant proportion of the IEE's 130,000 members are engaged in activities associated with the energy industry in all its aspects, including electricity generation and equipment manufacture. A note 'About IEE' is printed on the reverse of this letter.

The IEE supports this initiative to develop a European Union strategy for security of energy supply.

The development of an appropriate strategy will take time and require input from many quarters and many perspectives. In order to be credible and respected it needs to avoid pre-conceived ideas and must resist take-over by 'pressure' groups. The implementation of a successful strategy is key to our future and that of our successors.

The Attachment to this letter contains our detailed submission. If you require further information or amplification of any aspect of this submission, please contact:

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Yours sincerely

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About IEE

Who we are

Founded in 1871 IEE is the largest professional engineering society in Europe and has a world-wide membership of just under 140,000 ranging from students to the most distinguished and highly qualified members of the profession. IEE represents a wide range of engineering disciplines including power engineering, electronics, communications, computing, software engineering and manufacturing.

What we do

For the profession

IEE represents the profession of electrical, electronic, manufacturing and systems engineering and their related sciences. It sets standards of qualifications for its professional engineers and standards for the professional conduct of its members. IEE also acts as the voice of the profession in matters of public concern and assists in making the public aware of technological issues.

For our members

IEE operates a comprehensive network of global Professional Networks in a wide range of subjects. It organises an extensive range of lectures, meetings, conferences, seminars, residential vacation schools and publications.

The Career Advisory Service run by IEE gives advice and assistance to members on various aspects of career development, offers guidance on best practice in professional development and operates a Learning Resources Service to provide details of professional development activities provided by both the IEE and other organisations.

The Library at IEE Savoy Place has one of the foremost collections of books on electrical engineering in the world. It has more than 74,000 books and pamphlets and over 4000 periodical runs.

For education

IEE accredits degree courses in subjects relevant to electrical, electronic, manufacturing and information engineering at universities and colleges around the world. It also provides curriculum support to schools with the primary aim of encouraging young people to choose a career in a branch of electrical or electronics engineering. Each year IEE also makes various awards and prizes.

For business

The Business Partnership Scheme enables companies to participate in IEE activities and special events. IEE advises on and accredits company professional development schemes for engineering graduates. It issues regulations for the safe installation of electrical and electronic equipment and takes a leading part in the formulation of national and international standards. INSPEC, the IEE information service, is the world's largest computerised database in the English language in physics, electro-technology, computer science and control engineering. IEE also provides business and technical information in electrical, electronic, IT and manufacturing subjects.

A global organisation

Savoy Place, London is the IEE main building. IEE also has offices in the UK at Stevenage, Birmingham, Manchester and Glasgow and at sites around the world.

The Institution of Electrical Engineers is a not-for-profit organisation, registered as charity No. 211014 in the UK.

More information?

See www.iee.org.uk

Attachment

IEE Response to EC Green Paper: 'Towards a European Strategy for the Security of Energy Supply'.

1.	<p>Can the European Union accept an increase in its dependence on external energy sources without compromising its security of supply and European competitiveness? For which sources of energy would it be appropriate, if this were the case, to foresee a framework policy for imports? In this context, is it appropriate to favour an economic approach: energy cost; or geopolitical approach: risk of disruption?</p> <p>Answer:</p> <p>Although indigenous sources of energy have an important role to play, security of supply is best enhanced through diversity of supplies rather than self-sufficiency. Free trade and open, competitive markets are most likely to promote diversity. (See no.4 'Relations with producer countries').</p>
2.	<p>Does not Europe's increasingly integrated internal market, where decisions taken in one country have an impact on the others, call for a consistent and co-ordinated policy at Community level?</p> <p>Answer:</p> <p>Within the EU, security of supply can be improved by the liberalisation of energy markets and the encouragement of more integration between the energy networks of Member States (MSs). Ideally this would be by open energy markets in <u>all</u> MSs - with wide powers to enable prompt action to be taken against anti-competitive practices and market manipulation.</p>
3.	<p>Are tax and state aid policies in the energy sector an obstacle to competitiveness in the European Union or not? Given the failure of attempts to harmonise indirect taxation, should not the whole issue of energy taxation be re-examined taking account of energy and environmental objectives?</p> <p>Answer:</p> <p>A general 'energy tax' encourages overall reduction in energy consumption but, on its own, it does not encourage the use of clean energy. Also, such a tax does present a competitive disadvantage in respect of goods produced in 'energy tax-free' areas.</p> <p>A 'carbon tax' directly related to the carbon content of the emission due to an energy source encourages the use of clean energy sources, such as wind and wave, and puts these on an equal footing with nuclear (see no.8 'Nuclear'). An 'energy tax' with exemptions for clean energy is a form of 'carbon tax'.</p> <p>MSs should ensure existing subsidies are clear and open and <u>all subsidies on fossil fuels should be removed</u>. If an MS believes some national goal is served only by nuclear power, then it should ensure that all future Government support is explicit.</p> <p>Carbon tax coupled with 'emission trading', would seem to offer the most flexible way of achieving environmental objectives without proscribing the security benefits of indigenous fossil energy sources such as coal and oil. (See no.5 'Stockpiles')</p>

4.	<p>In the framework of an ongoing dialogue with producer countries, what should supply and investment promotion agreements contain? Given the importance of a partnership with Russia in particular, how can stable quantities, prices and investments be guaranteed?</p> <p>Answer:</p> <p>The EU and MSs must foster good relations with all energy producing countries, not just Russia.</p> <p>Encouraging and assisting Russia to participate in the international energy market (free trade and open, competitive markets) will contribute to economic stability within Russia. In turn, this will help to foster the stability and security of energy supplies from Russia.</p>
5.	<p>Should more reserves be stockpiled - as already done for oil - and should other energy sources be included, such as gas or coal? Should the Community take on a greater role in stock management and, if so, what should the objectives and modalities be? Does the risk of physical disruption to energy supplies justify more onerous measures for access to resources?</p> <p>Answer:</p> <p>The case for a formal 'European Storage Requirement' is weak, especially if greater diversification of supply is achieved. However, it would seem prudent to encourage competitive access to existing storage facilities for gas, oil (and coal?). This will help ensure their optimum use in response to market conditions.</p> <p>The security benefits of using indigenous fossil fuels make it essential that coal, oil and gas remain part of the European energy mix and <u>continue to be extracted within the UK and EU.</u></p>
6.	<p>How can we develop and ensure better operation of energy transport networks in the European Union and neighbouring countries so as to enable the internal market to function properly and guarantee security of supply?</p> <p>Answer:</p> <p>Network operators need commercial incentives to develop their networks and achieve a level of integration with other networks within and outside national boundaries. A technical and financial framework for operation between MSs needs to be developed and implemented.</p>
7.	<p>The development of some renewable energy sources calls for major efforts in terms of research and technological development, investment aid and operational aid. Should co-financing of this aid include a contribution from sectors which received substantial initial development aid and which are now highly profitable (gas, oil, nuclear)?</p> <p>Answer:</p> <p>The use of energy from clean and renewable sources is welcomed and it is important that targets for the reduction of CO₂ are met. However, all sources of energy need to be considered on their economic merits. Not all renewable energy sources are emission-free and 'energy taxes' need to be flexible enough to accommodate these by, for example, carbon tax <u>plus</u> emission trading.</p>

8.	<p>Seeing that nuclear energy is one of the elements in the debate on tackling climate change and energy autonomy, how can the Community find a solution to the problem of nuclear waste, reinforcing nuclear safety and developing research into reactors of the future, in particular fusion technology ?</p> <p>Answer:</p> <p>Discussion on the use of nuclear fission technology should be based on the true economics of whole life costing, including the costs of fuel processing, waste disposal and station decommissioning.</p> <p>Nuclear power is capable of making a very large contribution to enabling MSs and the EU to meet CO₂ emission targets. This benefit should not be overlooked.</p> <p>European level research into nuclear waste disposal, possibly a co-ordinated EU approach, should be promoted.</p> <p>Power from commercial nuclear fusion technology is probably still at least 25 years away.</p>
9.	<p>Which policies should permit the European Union to fulfil its obligations under the Kyoto Protocol? What measures could be taken in order to exploit fully potential energy savings which would help to reduce both our external dependence and CO₂ emissions?</p> <p>Answer:</p> <p>Energy taxes are an ineffective way of reducing energy use - particularly in the case of transport (see no.12 'Transport').</p> <p>Carbon taxes with emission trading schemes have a greater potential for achieving focused effects. The development of an EU document on 'Emission Taxes & Trading' would be an aid to progress in this area.</p> <p>The business community and general public need to be encouraged to avoid wasting energy. Currently, 'wasted' energy is estimated to be around 20% of total UK consumption. See no.11 'Buildings'.</p>
10.	<p>Can an ambitious programme to promote biofuels and other substitute fuels, including hydrogen, geared to 20% of total fuel consumption by 2020, continue to be implemented via national initiatives, or are co-ordinated decisions required on taxation, distribution and prospects for agricultural production ?</p> <p>Answer:</p> <p>Alternative fuels may have some potential. The most promising seems to be the use of hydrogen with 'off-peak' electricity being used to produce this from water. Not only would this hydrogen be an 'energy storage medium' for electricity generation and distribution networks, but its uses could include public transport applications.</p> <p>A 'hydrogen economy' would help reduce emissions of CO₂ and dioxins: most 'biofuels' and some 'fuel cells' contribute little in this regard.</p> <p>A European initiative on a 'hydrogen economy' should be considered, paying particular attention to distribution infrastructure and transport applications.</p>

11.	<p>Should energy saving in buildings (40% of energy consumption), whether public or private, new or under renovation, be promoted through incentives such as tax breaks, or are regulatory measures required along the lines of those adopted for major industrial installations?</p> <p>Answer:</p> <p>With regard to those involved in the design/building/renovation of buildings, a mixture of tax breaks and regulatory measures should be of benefit in encouraging the use of good insulation, low energy lighting and heating schemes, etc. The problem is to persuade people to use energy more efficiently.</p> <p>Many studies have shown that more efficient use of electricity in offices and homes could result in energy savings of up to 20% with little reduction in comfort or quality of life. However, initiatives to 'educate' the public have generally resulted in much smaller savings.</p> <p>There may be a case to provide tax/regulatory incentives to encourage designers/builders/renovators to use combined heat and power systems, automatic sensors, time limited switches, etc. more widely.</p>
12.	<p>Energy saving in the transport sector (32% of energy consumption) depends on redressing the growing imbalance between road and rail. Is this imbalance inevitable, or could corrective action be taken, however unpopular, notably to encourage lower use of cars in urban areas? How can the aims of opening up the sector to competition, investment in infrastructure to remove bottlenecks and intermodality be reconciled?</p> <p>Answer:</p> <p>The EU transport sector is worthy of close study. In the UK tax revenue accounts for approximately 80% of road fuel prices, yet in 1999 road transport accounted for 34% of all energy consumption. Roadbuilding and traffic control/policing schemes, themselves, consume energy while road congestion continues to rise, causing increased delays and reduced efficiency. Energy and transport policy <u>must</u> be developed side-by-side. See no.14 'Other proposals'.</p>
13.	<p>How can we develop more collaborative visions and integrate the long-term dimension into deliberations and actions undertaken by public authorities and other involved parties in order to evolve a sustainable system of energy supply. How are we to prepare the energy options for the future?</p> <p>Answer:</p> <p>MSs will be best placed to cope with disturbances in the global energy market if EU energy markets are liberalised, anti-competitive practice/market manipulation outlawed and network integration/interconnection achieved .</p>

14.

Any other questions or proposals:

To improve the environment/transport situation in urban areas, the first requirement is the availability of adequate public transport powered by clean and efficient means. It might be possible to consider a total ban, within city centres, of vehicles using internal combustion engines (unless burning hydrogen). In due course economies of scale would ensure that an equitable balance between private and public urban transport would be restored with considerable improvement to the urban environment.

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