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## **REPORT**

on the Commission Green Paper Towards a European strategy for the security  
of energy supply  
(COM(2000) 769 – C5-0145/2001 – 2001/2071(COS))

Committee on Industry, External Trade, Research and Energy

Rapporteur: Giles Bryan Chichester



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## PROCEDURAL PAGE

By letter of 1 December 2000, the Commission forwarded to Parliament its Green Paper Towards a European strategy for the security of energy supply (COM(2000) 769 – 2001/2071(COS)).

At the sitting of 2 May 2001 the President of Parliament announced that she had referred the Green Paper to the Committee on Industry, External Trade, Research and Energy as the committee responsible and the Committee on Economic and Monetary Affairs, the Committee on Legal Affairs and the Internal Market, the Committee on the Environment, Public Health and Consumer Policy and the Committee on Regional Policy, Transport and Tourism for their opinions (C5-0145/2001).

The Committee on Industry, External Trade, Research and Energy had appointed Giles Bryan Chichester rapporteur at its meeting of 9 January 2001.

It considered the draft report at its meetings of 28 May, 21 June, 11 July, 28 August, 12 September, 10 October and 16 October 2001.

At the last meeting it adopted the motion for a resolution by 42 votes to 3.

The following were present for the vote: Carlos Westendorp y Cabeza chairman; Peter Michael Mombaur, vice-chairman; Giles Bryan Chichester, rapporteur; Regina Bastos (for Renato Brunetta), Guido Bodrato, Massimo Carraro, Gérard Caudron, Concepció Ferrer, Francesco Fiori (for Umberto Scapagnini), Colette Flesch, Glyn Ford, Neena Gill (for Norbert Glante), Alfred Gomolka (for Christos Folias), Lisbeth Grönfeldt Bergman (for Marjo Matikainen-Kallström), Roger Helmer, Juan de Dios Izquierdo Collado (for Elena Valenciano Martínez-Orozco pursuant to Rule 153(2)), Anne Elisabet Jensen (for Nicholas Clegg pursuant to Rule 153(2)), Hans Karlsson, Bashir Khanbhai (for Paul Rübig), Wolfgang Kreissl-Dörfler (for Myrsini Zorba), Hans Kronberger (for Daniela Raschhofer pursuant to Rule 153(2)), Helmut Kuhne (for Harlem Désir), Werner Langen, Rolf Linkohr, Erika Mann, Eryl Margaret McNally, Angelika Niebler, Giuseppe Nisticò (for Jaime Valdivielso de Cué), Reino Paasilinna, Wilhelm Ernst Piecyk (for François Zimeray pursuant to Rule 153(2)), Elly Plooij-van Gorsel, John Purvis, Godelieve Quisthoudt-Rowohl, Imelda Mary Read, Mechtild Rothe, Christian Foldberg Rovsing, Jacques Santer (for Michel Hansenne), Konrad K. Schwaiger, Esko Olavi Seppänen, Claude Turmes (for Nelly Maes), W.G. van Velzen, Alejo Vidal-Quadras Roca, Dominique Vlasto, Anders Wijkman and Olga Zrihen Zaari.

The opinion of the Committee on Environment, Public Health and Consumer Policy is attached the Committee on Legal Affairs and the Internal Market decided on 24 April 2001 not to deliver an opinion, the Committee on Regional Policy, Transport and Tourism decided on 25 April 2001 not to deliver an opinion and the Committee on Economic and Monetary Affairs decided on 13 September 2001 not to deliver an opinion.

The report was tabled on 17 October 2001.

The deadline for tabling amendments will be indicated in the draft agenda for the relevant part-session.

## MOTION FOR A RESOLUTION

### **European Parliament resolution on the Commission Green Paper Towards a European strategy for the security of energy supply (COM(2000) 769 – C5-0145/2001 – 2001/2071(COS))**

*The European Parliament,*

- having regard to the Commission Green Paper (COM(2000) 769 – C5-0145/2001)<sup>1</sup>,
- having regard to the Commission White Paper on energy policy for the European Union (COM(1995) 682)<sup>2</sup>,
- having regard to the conclusions of the Council meeting on industry and energy which took place on 14 and 15 May 2001,
- having regard to the opinion of the Economic and Social Committee<sup>3</sup>,
- having regard to Rule 47(1) of its Rules of Procedure,
- having regard to the report of the Committee on Industry, External Trade, Research and Energy and the opinion of the Committee on the Environment, Public Health and Consumer Policy (A5-0363/2001),

- A. whereas detailed bottom-up scenarios for the future energy demand in the EU are lacking in the Commission's proposed Green Paper,
- B. whereas EU import dependency for energy is 50% (49% in 1998) and is projected to rise to 71% by 2030 if no actions are taken. However import dependency is in itself not a decisive criterion for security of supply and has to be complemented by other criteria like lack of resources, risk of price insecurity, risk of domestic or foreign political crises, infrastructure failure or loss of public acceptance,
- C. whereas total energy consumption in the EU was 1 436 million tonnes oil equivalent (Mtoe) in 1998, of which 41% oil, 22% gas, 16% coal, 15% nuclear and 6% renewable energy sources (RES),
- D. whereas EU electricity generation is 35% nuclear, 27% solid fuel (predominantly coal), 16% gas, 15% RES, and 7% oil,
- E. whereas 95% of EU demand for nuclear fuel, 76% for oil, 50% of its coal, 40% for gas, 0% of its renewables is met from imports,

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<sup>1</sup> OJ C not yet published

<sup>2</sup> OJ C not yet published

<sup>3</sup> CES 162/2001 fin

- F. whereas the EU is dependent on Middle East countries for 41% of oil imports, the security of which depends largely on the foreign/military policy of the USA; on Russia for 41% of gas imports and 18% of oil imports; on Algeria for 29% of gas imports; and whereas about 95 % of its uranium requirement must be met from imports,
- G. whereas reducing the demand of end energy and improving energy efficiency in production is the best way to reduce Europe's external energy dependency. In all sectors of the economy there exists enormous untapped technical and economic potential to improve the EU's energy efficiency, as has been acknowledged by the Commission and the EP in their respective documents on the energy efficiency action plan and presented in more detail in the ECCP programme,
- H. whereas oil consumption in the EU is increasing, in particular in the transport sector . Whereas oil consumption in the sector of electricity production has gone down steadily, whereas oil consumption both in industry and in buildings are stagnating and even slowly reducing, the oil consumption in the EU is heavily increasing in the transport sector. The transport sector is responsible for 78% of the final energy demand increase since 1985. Import dependency of oil from a small number of countries is associated with a serious risk of price instability in the short run and lack of resources in the long run; it is noticeable that less developed countries are much more affected by oil price rises,
- I. whereas gas demand in the EU has risen markedly in both absolute terms and relative to other fuels where its market has risen over ten years from 16% to 22% in 1998 and is project to be 27% by 2020 if no action is taken. The rise is mainly due to massive use of gas in the electricity sector. While in the heating sector the gas consumption is still rising in certain EU countries and is peaking in those countries where the domestic gas distribution grid is well developed,
- J. whereas demand for coal in the EU has been decreasing for many years, import dependency is already 50% and is rising as a proportion of consumption of coal; the sources of supply are diverse and secure and in general more economic than the EU's own mining,
- K. whereas only eight member states generate nuclear electricity, there are currently no firm plans to construct replacement capacity and certain member states (Belgium, Germany, Netherlands and Sweden) have a declared policy to phase out nuclear power; whereas there would thus seem to be no political majority for future support for nuclear energy in the EU. Import dependency for uranium is almost total, however volumes involved are very small and sources of supply are diverse and secure;
- L. whereas the EU has set targets for increasing the share of energy consumption from RES from 6% to 12% and 22.1% electricity from RES by 2010; however, targets regularly set since 1985 for doubling the share of electricity from RES have not been achieved, but latest studies forecast much larger shares for 2010 and beyond in various Member States with effective support systems,

- M. whereas there are three main objectives for EU energy policy security of supply, competitiveness and protection of the environment, taking into account the principle of subsidiarity as established in the Council Resolution of 8<sup>th</sup> July 1986,
- N. whereas final energy use in the EU in 1998 was 28% in the industrial sector, 32% for transport and 40% in buildings; consumption growth in the transport sector is fastest,
- O. whereas final energy use in the EU improved 7% since 1990, but only 3% since 1993, yet current Commission proposals envisage 1% improvement per year in the future; whereas Parliament is of the opinion that annual reductions in final energy intensity of 2.5% ought to be achievable, provided a strong political will exists,
- P. whereas experience shows that well targeted public procurement programmes have the potential of significantly reducing the price of energy efficient equipment, which is yet not commercially viable, and thus making it competitive with conventional technologies,
- Q. whereas overall energy demand in the EU has been growing at a rate of between 1% to 2% per year since 1986,
- R. whereas taxation levels and excise duties vary considerably between Member States yielding between 4.7% (France) and 9.7% (Portugal) of total tax revenue compared with the EU average of 6.5% in 1997; duties on lead free petrol range between 750 euros per 1000 litre (UK) and 300 euros per 1000 litre (Greece),
- S. whereas the mix of energy sources vary widely between Member States; oil dependence ranging from 71% in Luxembourg to 11% in Italy; gas from 59% in Italy to 1% in Sweden; nuclear from 37% in France to zero in seven States; and RES from 28% in Sweden to 1% in Belgium,
- T. whereas the end of ECSC leaves only EURATOM as a stand-alone energy treaty; whereas the Euratom Treaty should expire after 50 years of its existence in 2007,
1. Welcomes the Commission Green Paper “Towards a European strategy for the security of energy supply” as a basis for a discussion, regrets missing scenarios for demand side, renewables and co-generation and urges Commission to develop before next year’s Barcelona summit comprehensive scenarios. This analysis should have a more detailed bottom-up approach taking better account also of the existing scenario work done in the different EU countries;
  2. Considers that the most appropriate strategy to ensure energy supply consists in diversifying energy sources and origins of supply;
  3. Recognises the fundamental importance of security of energy supply and the cost of energy to the European economy and stresses the high priority that must be given by the Commission, Council and Member State governments to securing long-term stable energy supplies in the interests of continuing European prosperity and well-being;
  4. Notes that world total final energy consumption grew from 4 549 Mtoe in 1973 to 6 646

Mtoe, an increase of 46.1% over 25 years; notes that EU consumption is projected to grow by 22% in the period 1990 to 2020 and concludes that with demand rising faster in the world outside the EU, particularly in non OECD countries, there will be increased competing demand from third countries for the energy needed by EU Member States; and draws the conclusion from this that the EU must make efforts to ensure energy demand does not rise as forecast. Every available effort must be made to increase energy efficiency and energy-saving, and reduce dependence on imports;

5. Considers the level of dependence upon oil and the level of dependence on imports of oil to be of great concern. Urges the Commission to take concrete measures at EU level to curb demand for oil in the transportation sector by a stimulating new efficient engine – the 1 litre car – shifting the emphasis from road and air to rail and ship and pushing Member States for a more integrated regional and town planning. These actions should be combined with the development of alternative fuels like biofuels and hydrogen based on renewables. Further urges the Commission to take international action to bring new net importers like India and China to require similar strategic oil reserves as the OECD countries. Also asks the Commission and the EU 15 member states to take action in its activities with developing countries to aid the short and mid-term development of alternatives investments both in the transport and electricity sectors;
6. Calls on the Commission to submit a proposal for introducing a national energy requirement; within this energy requirement, Member States should be allowed to finance energy sources in accordance with the principle of general interest services;
7. Is of the opinion that the European Union should use its commercial and development policy more efficiently in order to facilitate penetration of the markets of energy supplying countries, principally to create or improve conditions for investment into gas and petrol transportation networks, in particular transportation via pipeline;
8. Recognises the growing importance of gas as its share of total energy rises towards 25% and its projected dominance in electricity production; Points out that the potential risks from dependence on natural gas can be reduced
  - by reducing the needs for gas in the field of heating by introducing energy conservation policies in new and existing building stock and energy efficiency measures like central heating systems based on cogeneration and/or biomass
  - by spreading the competition at every stage of the process in the natural gas market
  - by encouraging the construction of new connections (gas pipelines) with the producer countries or gasification terminals with the aim of diversifying the geopolitical and economic risk
  - by favouring a proactive policy with the main providers of gas like Russia and Algeria allowing for better conditions in technology transfer and capital investment both for the prospecting of new gas fields and for reducing the leakage's in existing pipelines and through carrying out plans in the fields of energy-saving. The ratification of the Energy Charter would provide a serviceable framework for this.
  - by taking practical measures within the EU framework to stockpile a higher level of gas reserves in the EU, so as to be able to anticipate breaks in gas supplies; EU countries which are highly dependent on gas imports should take extra measures in this area with all speed;



9. Notes the relative decline of coal and other solid fuels due to high production costs, high levels of polluting emissions and competition from lower cost imports while recalling that coal remains an important indigenous, stable and secure long-term energy source;
10. Notes that brown coal provides a substantial share of power production in some Member States and in major applicant countries. The structure of power production in some Member States is diversified by the use of coal and, in the EU-15 as a whole, this helps to ensure stability in the power industry. Coal, particularly indigenous brown coal, is an important factor here for the long term. The EU should continue to ensure in its energy and environmental strategies that this indigenous and competitive contribution to energy supply is secured;
11. Draws attention to the special role of brown coal, which is making a substantial contribution to energy production not only in some Member States such as Germany and the UK but also in several applicant countries. Securing this energy resource is in the EU's long-term interest;
12. Recognising the role that nuclear energy played in some Member States energy mix, while noting that no country is currently constructing new nuclear reactors and that eleven of the fifteen Member States do not have nuclear power or are currently phasing it out. Further noting that the EU and other signatories have excluded nuclear power within the Clean Development Mechanism of the Kyoto Protocol. Recognises that the EU is committed to reaching its Kyoto target of 8% reduction in Co2 by 2010 and welcoming the statement of the Green Book that unless energy efficiency is introduced to curb energy demand, the EU will have trouble meeting its CO2 reduction commitments. Further calls for the EU to lead discussions to set Co2 reduction targets for 2020; also recognises that nuclear energy will be playing a less significant role following decisions to phase it out and/or introduce moratoria in five other Member States; points out that after the attack on the World Trade Center it is of great importance to take special measures in the Member States to substantially improve the safety of nuclear power stations, and calls for special vigilance within the IAEA in order to counteract the smuggling of nuclear fuel;
13. Recommends that the Commission take the necessary measures to ensure that current human resource levels in the nuclear sector do not shrink to such an extent as to jeopardise the existence of the valuable wealth of knowledge and experience that Europe has acquired in this field over the past fifty years;
14. Calls on the Commission to draw up an energy ladder indicating the order of preferred energy sources determined by CO2 emissions; also calls on the Commission to indicate how each energy source increases or reduces the EU's dependence on non-member countries;
15. Reaffirms its strong support for RES and agrees with the Commission's conclusion that the use of biomass for energy supply can be significantly improved; calls on Member States to redouble efforts to achieve a 12% share of total energy consumption and 22.1% of electricity from RES by 2010 and welcomes the adoption of the Directive on electricity from RES;

Ask Commission to develop before 2005 a 2020 EU target for RES and ask for better RD&D policies and a more flexible interpretation of competition rules while a technology is in development;

16. Agrees with the Commission's conclusion that the use of bio-fuels (such as biodiesel, based for instance on oil seed rape and alcohol) will reduce our dependence on fossil fuels and hence the greenhouse effect; calls on the Commission to encourage the production of raw materials for biofuels and do its utmost to remove restrictions on the growing of such raw materials under the WTO;
17. Calls on all EU Institutions to encourage the shift towards zero-carbon emission fuels for power, notably electricity generation and hydrogen for transport fuel from biomass, hydroelectric, solar and wind energy sources, both by removing existing legislative obstacles and by making them subject to a specific EU-wide exemption from all excise duties, energy taxes or climate levies and also by providing incentives to encourage a shift towards efficient energy production plants, including combined heat and power;
18. Agrees with the Council conclusion that a shared view on a strategy for security of supply should respect Member States' geographical, economical, regional, climate and structural differences; promote further market opening in the EU; be consistent with sustainable development as well as climate change commitments within the energy sector; and add value over action by individual Member States and thus also to support local energy production, particularly of combined heat and power production (CHP); therefore considers it important to develop and promote the use of local raw materials, and proposes that the significance of energy sources exploitable at local level in the Member States, and of the whole role of local energy as a way of securing energy supplies should be examined; highlights the need, however, for the coordination of national energy policies in the interest of the Community as a whole;
19. Agrees with the Commission conclusion that the first priority for action should be in the field of demand management measures to improve efficiency of energy use and reduce consumption through conservation; calls on the Commission to submit specific proposals and measures in the demand area as soon as possible, such as a directive on the 'stand-by mode' or improving efficiency in domestic appliances. Regrets the delay in bringing forward proposals for the transport sector and in the field of cogeneration, energy services and demand side management. Asks the Commission to launch a strategy to make Europe the most energy-efficient economy in the world (Energy Intelligent Europe). Notes that no other energy option offers such potential for economic and environmental improvements as energy efficiency. Given that the Commission notes that 18% of energy can be saved with currently available technology and at no extra costs, calls for urgent action in all areas. Demand side should also play a leading role in EU energy international collaboration both with central and eastern Europe, Russia and Ukraine, but also with developing countries using also the new flexible instruments of the Kyoto protocol;
20. Notes that the resources allocated to research into new and better methods of producing and using energy, in the Sixth Framework Programme for Research and Development project, do not meet expectations for increasing energy efficiency. Wishes Parliament

and the Council to review increasing such resources and, in particular, to allocate a greater share of funds, in absolute and relative terms, to researching systems;

21. Takes the view that despite the absence of a separate energy chapter the EU has plenty of opportunities to conduct an energy policy of its own. Such a policy consists of the following elements:
- liberalising the energy industry,
  - promoting a level playing-field,
  - promoting the use of renewable energy sources and monitoring implementation of the Kyoto agreements at EU level,
  - research and development in the energy field,
  - developing geopolitical frameworks for concluding energy contracts,
  - promoting EU policy for energy-saving,
  - ensuring that consumer interests are respected in EU policy,
  - safeguarding security of supply by giving special attention to creating conditions to enable the cross-frontier transmission of gas and electricity to take place;
- Welcomes the call by the Commission for an Energy Chapter and calls on the Member States to include in the EC Treaty a chapter on an Energy Policy, at the next IGC, in order to approximate policy frameworks and pave the way for a more systematic and long-term approach to energy, with declared priority for an efficient use of energy;
22. Recognises that taxation can have an important part to play in influencing patterns of behaviour, and can be used as an instrument for guiding energy use, as can regulations and technical measures, but considers, from past experience and Commission studies, that taxation must be applied along with practical measures to reduce energy use. Targeted taxes, that reflect the environmental impact of energy sources must be introduced that encourage lower energy use and enable environmental commitments to be met: In Germany alone a petrol saving of about 5 % has been achieved since introducing the 'eco-tax';
23. Considers that fiscal measures now need to form part of a balanced package of instruments to encourage energy savings in industry and domestic households, and to promote the use of sustainable energy in order to ensure self sufficiency, and considers that voluntary agreements with industry are a valuable instrument; in this context calls on the Commission to present a proposal for framework legislation on voluntary environmental agreements, which lays down the relevant criteria with regard to conditions, monitoring arrangements and binding penalties.
24. Believes that all forms of electricity production must internalise negative externalities equally, without the current instances of discrimination that favour some primary energy sources over others;
25. Believes that the costs incurred from the internalisation of the negative externalities relating to the various primary energy sources should be reflected in the price for the end user, the aim being to convey the desired message to the market and thus trigger awareness in society as to the need for more rational use of energy resources;
26. When deemed necessary, taxation should be applied to carbon emissions and other

pollutants rather than energy production itself;

27. Considers that any taxation of energy for environmental reasons should bear very much in mind the effect on competitiveness of the European economy along with the inflationary affects on vulnerable industries, vulnerable socio-economic groups and vulnerable remote and rural regions;
28. Notes that, in order to increase the energy efficiency of transport, the TEN network, intermodal transport and 'intelligent transport' solutions need to be developed; considers it urgent that the Commission submit proposals for sustained, long-term improvement in energy efficiency and conservation in the transport sector by working with the industry and, where appropriate, making legislative proposals to achieve (a) more fuel efficient engines; (b) lighter, stronger materials for vehicle construction; (c) use of alternative fuels, particularly biofuels and hydrogen; (d) a transfer of traffic from road to more environmentally friendly transport modes such as rail or inland waterway; (e) optimising inter-operability and the combination of transport modes;
29. Considers that an energy-efficient transport system will require large public and private investment and calls on the European Investment Bank to make this an area of high priority both for its own funding and to promote private sector financing and co-financing;
30. Requests the Commission to produce a co-ordinated strategy for tax incentives on new transport fuels, in order to stimulate pan EU investment in infrastructure, and encourage the marketing of new motive power systems;
31. Notes the considerable potential for energy efficiency gains, reductions in polluting emissions and a world-wide market for new equipment and systems from clean coal technology and calls for industry and the newly established fund formed out of the ECSC to achieve a successful demonstration of clean coal power systems. Believes, therefore, that it is essential to maintain a viable indigenous coal production industry while recognising the need for greater efficiencies and reduced subsidies;
32. Points out that greater resources than at present provided must be allocated, under the Sixth Framework Programme, to research and development into technologies that will improve the yield from and environmental compatibility of the combustion of carbons and other traditional fuels to generate electricity. Wishes dissemination of the results of such research to be promoted by cooperation programmes with third countries, particularly developing countries, with the aim of safeguarding the environmental sustainability of the expected growth in energy demand in such countries.
33. Calls for a European initiative for the development of an emission-free coal-fired power station;
34. Notes that maintaining security of energy supply is primarily a matter for the energy policy of the Member States, though this does not rule out agreements concluded with other countries for improving security of energy supply; considers that national responsibility for ensuring security of energy supply means that Member States must have freedom of action in the means they use to ensure security of supply; calls on

Council and Commission to move swiftly to complete the missing links in trans-European energy networks (TENS) in order to improve security of supply as well as complete the internal market, by supporting specific projects, where appropriate; Calls for particular attention to be given to the development of natural gas transport networks. To this end, wishes to see close cooperation between the energy industry, the Union, the Member States and the financial institutions to mobilise all the available resources in the best market conditions;

35. Believes that the failure to adopt effective measures to increase interconnection - above all in areas where it is most lacking, as is the case with the Iberian Peninsula vis-à-vis the rest of Europe - will prevent the emergence of a fully functioning internal market in energy as an alternative to the apparent prevailing trend towards various liberalised national markets;
36. Recognises the employment and social security effects of local energy production and its importance in securing energy supply, and the huge potential for increased employment, as well as equipment and systems sales, both within the EU and in the wider world, from investment in new capacity for generating electricity from RES, nuclear energy, clean coal technology, combined heat and power generation, techniques for energy-saving and intelligent energy consumption applications (ICT);
37. Calls on the Commission to explore appropriate technology fields where large-scale procurement initiatives could result in major efficiency gains as well as reduced dependency on fossil imports;
38. Supports investment in researching, developing and exploiting more efficiently our indigenous supplies of energy in ways which are compatible with Europe's environmental commitments;
39. Recognises the wide desirability and necessity of electricity from RES, and that in the long run it will be possible to cover our power requirement from the use of various renewable energy technologies; thus a combination of biomass and hydro-electric power will in future provide for constant base load generation; in addition, the use of wind and photovoltaic power, in conjunction with fuel cell technology, will be able to cover loads in excess of the base load;
40. Considers it essential that the EU lead by example in maintaining research expenditure with the 6FP on future energy technologies such as renewable energy, energy efficiency, electric batteries and other energy storage systems and intelligent energy consumption applications (ICT). Notes that nuclear energy, fission and fusion, continues to receive more FP funding than all other energy sources. Given the limited role that fission plays in current Member States energy policies and that fusion will not be commercially viable for 100 years, if ever, this level of funding is disproportionately high and should be reduced and eventually eliminated; points out that there is also a need to improve existing techniques and generally encourage research into energy generation, electricity transmission and distribution, and into the new problems posed by the distributed generation and diffusion of renewable energy sources;

41. Draws attention to the fact that the transition to a low carbon economy requires a great deal of research and innovation; calls on the Commission and the Member States to pool their efforts and to draw up a joint research agenda; proposes that particular attention be paid to this aspect in the Sixth Framework Programme for Research and recommends that Article 169 be used as the instrument;
42. Remains of the view that an essential part of maintaining security of supply is to complete the liberalisation of energy markets to achieve a fully functioning internal market in electricity and gas to enhance competitiveness, transparency and energy efficiency; considers that there is an urgent need to create a level playing field in the EU as soon as possible and therefore wishes to see full liberalisation come about as soon as possible.  
Special measures to insure security of supply should not be allowed to offset the general rules of the internal energy market more than necessary;  
External costs of fossil and nuclear fuels should be fully internalised, where they are not already.
43. Recognises the great importance of fusion as a major new source of CO<sub>2</sub>-free energy worldwide in the future, the competitive advantage held by European fusion researchers and the importance of siting ITER within Europe;
44. Urges the Commission to assert the full strength of European competition policy and the rules of the European single market on all energy suppliers;
45. Points out that liberalisation must be based on reciprocity between the Member States in the case of access to energy markets;
46. Disagrees with the Commission view that little can be done on the supply side, having regard to targets for an increased share of final energy consumption for RES; calls on the Commission to put forward legislative proposals for (a) expanding combined heat and power generation, and (b) encouraging alternative energy sources such as the combustion of waste;
47. Recommends that special emphasis be placed on research into new designs for safer and less costly fission reactors with more efficient fuel consumption, given the need, whatever the future of nuclear power may be, to remain sufficiently capable of drawing upon a diverse range of energy sources that do not emit greenhouse gases, should dramatic geostrategic shifts in the world or a sudden adverse trend in climate change render it vital to update nuclear power stations in Europe once the current generation of power stations reaches the end of its useful life;
48. Believes that the targets of 22.1% electricity from RES by 2010 are essential for security of supply and achieving Kyoto emission reduction targets;
49. Recognises the importance of good political relations with EU major energy supply partner countries. Moreover, this cooperation should be reinforced in order to be able to create commercial conditions which are favourable for European enterprises and for the supply of gas and petrol.

Supports the Commission initiative not only with Russia but also the Caucasian Republics, Iran and other countries producing fossil fuels and calls for speedy ratification of the Energy Charter.

Proposes that the European Union's Northern Dimension policy be given concrete form by energy projects serving common European objectives, e.g. the construction of a northern gas pipeline link from Russia to Europe.

50. Agrees with the Commission proposal to step up political and economic cooperation with the Caspian Sea countries, to obtain a more geographically distributed energy supply, giving special attention to transit through such countries as Ukraine and Turkey;
51. Calls on those Member States who presently enjoy the benefits of nuclear generation of electricity which have not already made provision for the treatment and disposal of their own radioactive waste material to adopt appropriate measures as soon as possible because, having regard to the importance of nuclear electricity to EU security of supply, the waste issue must be addressed and public confidence must be secured in the solutions. The Commission has a role in this regard in suggesting options;
52. Considers that the storage of nuclear waste is still a problem requiring more research and greater efforts; also calls for the safety of nuclear power stations in the candidate countries to be guaranteed;
53. Calls on the Commission to draw up a treaty for promoting, researching and expanding renewable energies that will recognise that there is unlimited need for this, in so far as we also want to safeguard sustainable energy supply for the period after the expected exhaustion of fossil energy sources;
54. Considers that a major challenge facing the EU and Member States is the need to shift public attitudes and perceptions from the present widely held view that energy is in plentiful supply with no likelihood of change in the foreseeable future to a better understanding of how vital energy is to everyday life and EU living standards and therefore how important it is to behave responsibly in energy use through greater efficiency and conservation measures. Calls for measures to inform public opinion;
55. Points out that there are 2 billion people in the world today who do not have access to electricity; emphasises that sustainable energy reduces dependence and can promote economic development.
56. Encourages the use of local and regional energy resources as a way to secure the energy supply and support the production and use of all local fuels in the whole EU;
57. supports the discussion with local and regional energy initiatives;
58. Instructs its President to forward this resolution to the Council and Commission and the parliaments of the Member States.

## EXPLANATORY STATEMENT

An executive summary of the Green Paper can be seen in the Working Document<sup>1</sup> of this Report and can be found in the Green Paper itself.

Three main points are made in the Green paper. First, that the EU will become increasingly dependent on external energy sources, reaching 70% in 2030. Second the EU has very limited scope to influence energy supply conditions so it is on the demand side where the EU can intervene, mostly through promoting energy saving in buildings and in the transport sector. Third, in present circumstances, the EU is not in a position to respond to the challenge of climate change and to meet its commitments, notably under the Kyoto Protocol.

One thing above all else is staring us in the face and that is the massive dependence on oil and on imported oil in particular. For common sense reasons of security of supply and protection of the environment, urgent steps should be taken to address this disproportionate dependence. We cannot alter the fact of where the oil comes from, but we can do a number of things on the demand side, in particular in the transport sector.

Being dependent on imports is neither necessarily a bad thing nor economically inefficient provided the sources are diverse, no one supplier is dominant and we can produce sufficient goods and services to pay for them.

The Commission is correct to focus on demand management measures as a first priority and it is to be hoped that Member States will pursue this approach vigorously. However your Rapporteur does not accept the view that little or nothing can be done on the supply side. In four areas the EU and Member States can be masters of their own destiny to make a real difference both to security of supply and to protection of the environment.

Renewable energy sources (RES) are by definition indigenous supplies and we are correct to seek to increase their share of final consumption and electricity generation. However let us be realistic, even if the ambitious targets for RES are met, they cannot be expected to replace any of the other energy sources completely or become the sole supplier of all our energy needs as one of its more enthusiastic advocates told the Energy Committee Hearing.

Nuclear energy is not popular in some quarters but it supplies the greatest share of electricity in Europe of any energy source, it provides large volume base load power and produces hardly any greenhouse gas emissions. It is a safe and secure European technology operated under stringent standards of regulation. To deliberately deny ourselves of this major source of electricity seems perverse in the absence of an alternative volume source of supply. There are satisfactory solutions to the issue of waste for those willing to listen to them.

Coal is a source of energy in decline in Europe, because of cost and environmental concerns, yet it is an important indigenous resource which could be given a new lease of life, so to speak, with new technology to make it more efficient and less pollutant. Furthermore there is huge scope for gaining business in the rest of the world for European suppliers of equipment and systems if the industry can seize the opportunity.

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<sup>1</sup> PE 302.129



The fourth area is, of course, in research work for future technologies and energy systems. That is something Europe must do in order to safeguard future security of supply, future employment and technology. It seems obvious but needs repeating.

For all of the above reasons your Rapporteur also disagrees with the view that the EU cannot meet its Kyoto commitments. What is needed is realism on the nuclear issue, determined effort on clean coal technology, much encouragement for RES, co-ordinated demand management measures (i.e. avoiding simplistic taxation only solutions) and a sustained effort to inform public opinion about the necessity to stop wasting energy.

Finally, we must remember that Europe is not an island unto itself and that is why we are concerned about security of supply and import dependency. Demand for energy is rising everywhere and Europe must compete with that rising demand in the rest of the world for the energy that is vital to our way of life. That is why the following tables and diagrams form part of this explanatory note, to emphasise a global perspective.

## Key world energy statistics

from International Energy Agency (IEA)

### Producers, Exporters and Importers of Crude Oil

Producers	Mt	% of World total	Exporters*	Mt	Importers*	Mt
Saudi Arabia	426	12.4	Saudi Arabia	353	United States	490
United States	355	10.3	Russia	137	Japan	218
Russia	303	8.8	Norway	137	Korea	114
Islamic Rep. of Iran	176	5.1	Venezuela	123	Germany	109
Mexico	163	4.7	Islamic Rep. of Iran	102	Italy	92
Venezuela	162	4.7	Nigeria	98	France	90
People's Rep. of China	161	4.7	United Arab Emirates	96	Netherlands	62
Norway	149	4.3	Mexico	91	Spain	61
United Kingdom	139	4.0	United Kingdom	85	Singapore	52
Iraq	125	3.6	Iraq	75	United Kingdom	48
<b>Rest of the World</b>	<b>1 286</b>	<b>37.4</b>	<b>Rest of the World</b>	<b>625</b>	<b>Rest of the World</b>	<b>606</b>
<b>World</b>	<b>3 445</b>	<b>100.0</b>	<b>World</b>	<b>1 922</b>	<b>World</b>	<b>1 942</b>

1999 Data

1998 Data

1998 Data

\*Total exports and imports.

Sources: Energy Statistics and Balances of non-OECD Countries; Oil Information.

## Producers, Exporters and Importers\* of Natural Gas

Producers	Mm <sup>3</sup>	% of World total	Exporters	Mm <sup>3</sup>	Importers	Mm <sup>3</sup>
Russia	589 484	24.4	Russia	203 408	United States	89 256
United States	531 054	21.9	Canada	88 589	Germany	74 247
Canada	176 797	7.3	Algeria	55 781	Japan	68 996
United Kingdom	104 958	4.3	Norway	42 645	Ukraine	53 549
Algeria	83 189	3.4	Netherlands	38 887	Italy	42 646
Netherlands	75 002	3.1	Indonesia	36 277	France	35 192
Indonesia	67 677	2.8	Malaysia	19 053	Belarus	16 297
Islamic Rep. of Iran	54 815	2.3	Australia	9 770	Belgium	14 572
Norway	50 990	2.1	Uzbekistan	8 000	Korea	13 842
Uzbekistan	50 268	2.1	Brunei	7 484	Spain	13 202
Rest of the World	636 474	26.3	Rest of the World	41 005	Rest of the World	123 461
<b>World</b>	<b>2 420 708</b>	<b>100.0</b>	<b>World**</b>	<b>550 899</b>	<b>World**</b>	<b>545 260</b>

1999 Data

1998 Data

1998 Data

\*Exports and Imports include pipeline gas and LNG.

\*\*World trade includes intra trade of Former USSR.

Sources: Energy Statistics and Balances of non-OECD Countries; Natural Gas Information.

## Producers, Exporters and Importers of Coal

Producers	Hard Coal (Mt)	Brown Coal (Mt)	Exporters	Hard Coal (Mt)	Importers	Hard Coal (Mt)
People's Rep. of China	1 029	*	Australia	170	Japan	133
United States	914	78	South Africa	66	Korea	52
India	290	22	Indonesia	54	Chinese Taipei	41
Australia	225	66	United States	53	Germany	22
South Africa	224	0	People's Rep. Of China	37	United Kingdom	21
Russia	163	90	Canada	34	Spain	20
Poland	111	61	Colombia	30	Netherlands	19
Ukraine	81	3	Russia	27	India	18
Indonesia	74	0	Poland	24	France	17
DPR of Korea	62	23	Kazakhstan	24	Italy	17
Rest of the World	290	536	Rest of the World	30	Rest of the World	175
<b>World</b>	<b>3 463</b>	<b>879</b>	<b>World</b>	<b>549</b>	<b>World</b>	<b>535</b>

1999 Data

1999 Data

1999 Data

\*Included in Hard Coal.

Sources: Energy Statistics and Balances of non-OECD Countries; Coal Information.

## Producers of Nuclear Electricity

Producers	TWh	% of World total	Installed Capacity	GW	Country (based on first 10 producers)	% of nuclear in total domestic electricity generation
United States	714	29.2	United States	98	France	77
France	388	15.9	France	63	Sweden	47
Japan	332	13.6	Japan	44	Ukraine	44
Germany	162	6.6	Germany	22	Korea	38
Russia	104	4.3	Russia	20	Japan	32
United Kingdom	100	4.1	Canada	15	Germany	29
Korea	90	3.7	Korea	13	United Kingdom	28
Ukraine	75	3.1	United Kingdom	13	United States	19
Sweden	74	3.0	Ukraine	12	Canada	13
Canada	72	2.9	Sweden	9	Russia	13
Rest of the World	333	13.6	Rest of the World	48	Rest of the World*	10
<b>World</b>	<b>2 444</b>	<b>100.0</b>	<b>World</b>	<b>357</b>	<b>World</b>	<b>17</b>

1998 data

1999 Data

Source: Commissariat à l'Energie Atomique (France).

1998 data

\* Countries with nuclear production only.

Sources: Energy Statistics and Balances of non-OECD Countries; Electricity Information.

### Producers of Hydro Electricity

Producers	TWh	% of World total	Installed Capacity (based on production)	GW	Country (based on first 10 producers)	% of hydro in total domestic electricity generation
Canada	332	12.6	United States *	99	Norway	99.4
United States	322	12.2	Canada *	67	Brazil	90.6
Brazil	291	11.0	People's Rep. of China	66	Canada	59.1
People's Rep. of China	208	7.9	Brazil *	56	Sweden	47.0
Russia	159	6.0	Russia	44	Russia	19.3
Norway	116	4.4	Japan *	45	People's Rep. of China	17.4
Japan	103	3.9	Norway *	28	India	16.8
India	83	3.1	France *	25	France	12.9
Sweden	74	2.8	India *	22	Japan	9.8
France	66	2.5	Sweden*	16	United States	8.4
Rest of the World	889	33.6	Rest of the World	253	Rest of the World	16.9
<b>World</b>	<b>2 643</b>	<b>100.0</b>	<b>World</b>	<b>721</b>	<b>World</b>	<b>18.4</b>

1998 Data

1997 Data

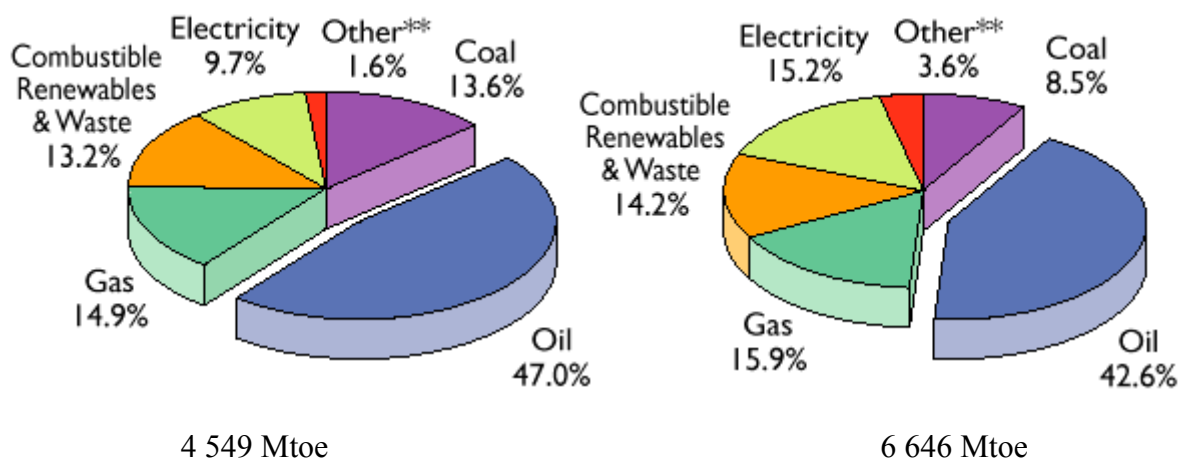
\*1998 update

Sources: United Nations, IEA

1998 Data

Sources: Energy Statistics and Balances of non-OECD Countries; Electricity Information.

### 1973 and 1998 Fuel Shares of Total Final Consumption

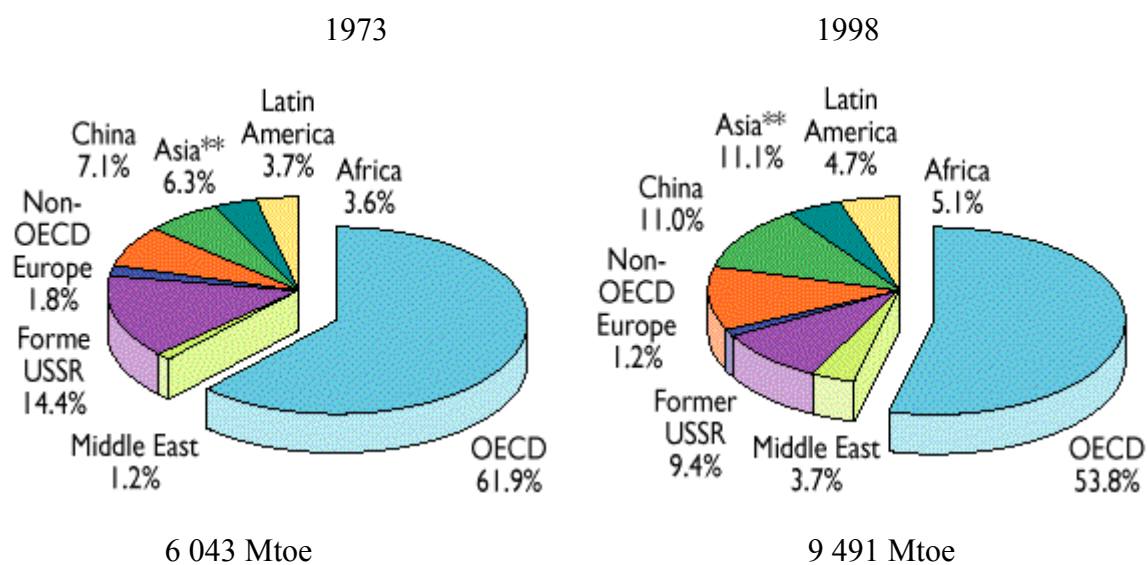


\*\*Prior to 1994 Combustible Renewables & Waste final consumption has been estimated based on TPES.

\*\*Other includes geothermal, solar, wind, heat, etc.

Source: Energy Statistics and Balances of non-OECD Countries.

### 1973 and 1998 Regional Shares of TPES\*



\*Excludes international marine bunkers and electricity trade.

\*\*Asia excludes China.

Source: Energy Statistics and Balances of non-OECD Countries.

13 September 2001

## **OPINION OF THE COMMITTEE ON THE ENVIRONMENT, PUBLIC HEALTH AND CONSUMER POLICY**

for the Committee on Industry, External Trade, Research and Energy

on the Commission Green Paper 'Towards a European strategy for the security of energy supply'

(COM(2000) 769 – C5-0145/2001 – 2001/2071 (COS))

Draftsman: María del Pilar Ayuso González

### **PROCEDURE**

The Committee on the Environment, Public Health and Consumer Policy appointed María del Pilar Ayuso González draftsman at its meeting of 10 April 2001.

It considered the draft opinion at its meetings of 12 July and 12 September 2001.

At the latter meeting it adopted the following conclusions by 34 votes to 2, with 1 abstention.

The following were present for the vote: Guido Sacconi, acting chairman; Alexander de Roo, vice-chairman; María del Pilar Ayuso González, draftsman; Per-Arne Arvidsson, Jean-Louis Bernié, Hans Blokland, John Bowis, Hiltrud Breyer, Dorette Corbey, Anne Ferreira, Cristina García-Orcoyen Tormo, Robert Goodwill, Françoise Grossetête, Cristina Gutiérrez Cortines, Jutta Haug (for Bernd Lange), Anneli Hulthén, Marie Anne Isler Béguin, Hans Kronberger, Peter Liese, Torben Lund, Minerva Melpomeni Malliori, Patricia McKenna, Jorge Moreira da Silva, Rosemarie Müller, Riitta Myller, Karl Erik Olsson, Béatrice Patrie, Marit Paulsen, Frédérique Ries, Dagmar Roth-Behrendt, Giacomo Santini, Karin Scheele, Bart Staes (for Inger Schörling), Catherine Stihler, Antonios Trakatellis, Roseline Vachetta, Kathleen Van Brempt (for David Robert Bowe) and Phillip Whitehead.

## SHORT JUSTIFICATION

The Green Paper on the security of energy supply provides a general overview of the energy situation in Europe in the coming decades and expresses concern about various fundamental issues.

Firstly, the EU's dependence on external supplies of energy will rise from 50% at present to 70% in the year 2030. 90% of oil and more than 70% of gas will have to be imported. The restructuring of the coal sector and the reduction in the number of local coal mines will aggravate the situation. Clearly, if the EU cannot control supply it must control demand. This is why the Commission is emphasising measures to promote energy-saving in buildings and transport; otherwise the EU will have serious difficulties in tackling climate change and meeting the commitments set out in the Kyoto Protocol.

Enlargement to include Eastern Europe will make the situation worse, since Eastern Europe's energy supply is based, in addition to oil, on two unpopular energy sources which are being increasingly penalised - coal and nuclear energy.

Furthermore, the world demand for energy is growing and the developing countries have less stable rates of economic growth than the EU or the United States. All this may create future tension on energy markets because demand will increase and reserves will be used up, making the recent measures to liberalise energy markets in the EU even more necessary. These measures standardise the rules of competition in the internal market and eliminate the existing imbalance between the various national energy markets.

### 1. Oil

Europe's dependence on oil is increasing. This energy source is subject to great uncertainty because of the structure of the world market and the lack of geographical diversification, and because the discovery of new reserves depends on technological progress. It is not a clean source of energy and sometimes its transport has grave consequences for the environment. In order to reduce Europe's dependence, a strategy of replacing it with natural gas and alternative fuels must be pursued. On the other hand, it is essential to continue dialogue with oil-producing countries in order to achieve price stability.

### 2. Natural gas

The hazards of this energy source for the environment are considerably less than those of oil, the sources of supply are somewhat more diversified and the combined-cycle technologies are making power stations very efficient. It is also an option for replacing coal, although this will not help to reduce our external dependence. In the next few years there is expected to be a gradual increase in the price of natural gas, proportionate to the increase in demand.

### 3. Coal

This is the only energy source which the EU (and the future enlarged EU) has in abundance. It is not the most environmentally friendly source and its competitiveness is debatable. The logical alternatives to replace it are natural gas and renewable energies. However, new technological advances are making it possible to develop new power stations in which

efficiency, as regards both energy and the environment, is much greater. We must consider the future of coal from the point of view of its contribution to energy diversification and security in the EU.

#### **4. Nuclear energy**

Its contribution to combating climate change must not be underestimated. It does not raise any problems of economic viability. However there is the problem of waste. As the Commission rightly says, there seems to be no alternative to deep geological storage, although the radioactivity of waste may reduce as a result of transmutation. In any event, this energy source 'arouses strong feelings', which means that decision-making at political level is complex.

#### **5. Renewable energy sources**

The recent directive on renewable energies is one of the Commission's most important contributions. These forms of energy have many advantages, especially their 'environmental efficiency', which makes them particularly popular. We believe that it is necessary to continue a policy of promoting and researching into this type of energy, but not at the expense of other energy sources.

#### **6. Other energy sources**

In order to draw up a strategy to reduce the EU's external energy dependence and taking serious account of the challenges of climate change and enlargement, we must consider a range of completely new energy sources which need to be encouraged as a matter of urgency. In the new world situation, the first priority must be to diversify sources and origins, whilst gradually replacing less clean energy sources and those in which the EU is not self-sufficient, especially oil.

Priority must be given to research into new energies, such as fusion, renewable energies, clean coal and replacement fuels. We need to take a more global view of climate change and look at the large quantity of resources the EU has for the generation of energy – and, at the same time for the disposal of waste, rural development and, finally, for the protection of the environment. Examples are the use of biofuels, industrial and domestic waste, etc.

## CONCLUSIONS

The Committee on the Environment, Public Health and Consumer Policy calls on the Committee on Industry, External Trade, Research and Energy, as the committee responsible, to incorporate the following points in its motion for a resolution:

1. Welcomes the Green Paper, because it opens up a transparent debate on the EU's external energy dependence and the various energy options;
2. Considers that the most appropriate strategy to ensure energy supply consists in diversifying energy sources and origins of supply;<sup>3</sup> Considers that the most environment-friendly form of energy is that which is not produced; hence welcomes all proposals designed to save energy, mainly in buildings and transport; to promote the efficient use of energy, an energy tax is required, with a low rate on the first bracket covering essential energy requirements and a higher rate on subsequent brackets;
4. Takes the view that the EU will not be able to tackle the challenges of climate change without substantially stepping up its efforts to promote scientific research into new technologies and energy sources, in particular renewable energies and biofuels. One priority must be to ensure that 15% of gross domestic consumption of energy comes from renewable energy sources by the year 2010, but this is not to be achieved by placing tax burdens on other energy sources;
5. Considers that the storage of nuclear waste is still a problem requiring more research and greater efforts; also calls for the safety of nuclear power stations in the candidate countries to be guaranteed;
6. Calls on the Commission to draw up an energy ladder indicating the order of preferred energy sources determined by CO<sub>2</sub> emissions; also calls on the Commission to indicate how each energy source increases or reduces the EU's dependence on non-member countries;
7. Calls on the Commission and the Member States to draw up an action programme for each Member State setting out the options and measures required to meet the Kyoto target;
8. Considers that the progressive replacement of oil by natural gas and alternative fuels will further the fight against climate change. In any event, the system of minimum oil reserves must be reinforced, a policy of negotiation and collaboration with the supplier countries, especially Russia and OPEC, must be continued and investments in supply networks which guarantee the supply of petroleum and gas must be stepped up;
9. Considers that coal is questionable both environmentally and economically. However, it is the only fossil resource which the present and future EU possesses in abundance. It is therefore appropriate to consider new extraction technologies and the clean use of coal as an additional contribution to the diversification and security of energy supply;
10. Calls on the Commission to devise a strategy to promote scientific research and the development of infrastructure for the use of hydrogen as an energy source;



11. Considers that the recent proposals concerning the internal energy market are useful in order to guarantee energy supply, especially as regards the cross-border trade in electricity and in order to eliminate imbalances between national markets.
12. Draws attention to the fact that the transition to a low carbon economy requires a great deal of research and innovation; calls on the Commission and the Member States to pool their efforts and to draw up a joint research agenda; proposes that particular attention be paid to this aspect in the Sixth Framework Programme for Research and recommends that Article 169 be used as the instrument;
13. Points out that there are 2 billion people in the world today who do not have access to electricity; emphasises that sustainable energy reduces dependence and can promote economic development.