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## REPORT

on the Commission communication on alternative fuels for road transportation  
and on a set of measures to promote the use of biofuels  
(COM(2001) 547 – C5-0160/2002 – 2002/2068(COS))

Committee on Industry, External Trade, Research and Energy

Rapporteur: Francesco Fiori



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## PROCEDURAL PAGE

By letter of 17 December 2001, the Commission forwarded to Parliament a communication on alternative fuels for road transportation and on a set of measures to promote the use of biofuels (COM(2001) 547 – 2002/2068(COS)).

At the sitting of 11 April 2002 the President of Parliament announced that he had referred the communication 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 the Environment, Public Health and Consumer Policy, the Committee on Agriculture and Rural Development and the Committee on Regional Policy, Transport and Tourism for their opinions (C5-0160/2002).

The Committee on Industry, External Trade, Research and Energy had appointed Francesco Fiori rapporteur at its meeting of 24 January 2002.

It considered the Commission communication and the draft report at its meetings of 16 April 2002, 11 September 2002 and 1 October 2002.

At the last meeting it adopted the motion for a resolution by 43 votes to 1, with 1 abstention.

The following were present for the vote: Carlos Westendorp y Cabeza chairman; Peter Michael Mombaur and Jaime Valdivielso de Cué vice-chairmen; Francesco Fiori, rapporteur; Konstantinos Alyssandrakis, Sir Robert Atkins, Danielle Auroi (for Yves Piétrasanta), María del Pilar Ayuso González (for Guido Bodrato), Luis Berenguer Fuster, Ward Beysen (for Colette Flesch), Felipe Camisón Asensio (for Bashir Khanbhai), Gérard Caudron, Giles Bryan Chichester, Nicholas Clegg, Willy C.E.H. De Clercq, Marie-Hélène Descamp (for Werner Langen), Harlem Désir, Concepció Ferrer, Norbert Glante, Michel Hansenne, Roger Helmer (for Christian Foldberg Røvsing), Hans Karlsson, Dimitrios Koulourianos (for Fausto Bertinotti), Rolf Linkohr, Caroline Lucas, Eryl Margaret McNally, Erika Mann, Marjo Matikainen-Kallström, Elizabeth Montfort, Giuseppe Nisticò (for Paul Rübig), Reino Paasilinna, Paolo Pastorelli, Elly Plooij-van Gorsel, John Purvis, Godelieve Quisthoudt-Rowohl, Bernhard Rapkay (for Massimo Carraro), Konrad K. Schwaiger, Esko Olavi Seppänen, Claude Turmes, W.G. van Velzen, Alejo Vidal-Quadras Roca, Dominique Vlasto, Anders Wijkman (for Angelika Niebler), Myrsini Zorba and Olga Zrihen Zaari.

The Committee on Economic and Monetary Affairs and the Committee on the Environment, Public Health and Consumer Policy, the Committee on Agriculture and Rural Development and the Committee on Regional Policy, Transport and Tourism decided on 13 May 2002, 27 March 2002, 17 April 2002 and 22 January 2002 not to deliver an opinion.

The report was tabled on 2 October 2002.

## MOTION FOR A RESOLUTION

### **European Parliament resolution on the Commission communication on alternative fuels for road transportation and on a set of measures to promote the use of biofuels (COM(2001) 547 – C5-0160/2002 – 2002/2068(COS))**

*The European Parliament,*

- having regard to the Commission communication (COM(2001) 547 – C5-0160/2002<sup>1</sup>),
  - having regard to its resolution of 15 November 2001 concerning the Green Paper on the security of energy supply in the European Union (COM(2000) 769)<sup>2</sup>,
  - having regard to its resolution of 14 June 2001 concerning the Commission communication on the European Union's oil supply (COM(2000) 631)<sup>3</sup>,
  - having regard to its resolution of 18 June 1998 on the White Paper for a Community Strategy and Action Plan "Energy for the future: renewable sources of energy" (COM(1997) 599)<sup>4</sup>,
  - having regard to the report of the Committee on Industry, External Trade, Research and Energy (A5-0319/2002),
- A. whereas EU overall import dependency for energy is 50% and is projected to rise to 71% by 2030 if no action is taken; whereas a substantial increase in the output of renewable energy is one of the means of reducing this consistent with the commitments the EU undertook at Johannesburg,
- B. whereas 76 % of the EU demand for oil is met from imports, mainly from Middle East countries,
- C. having regard to the "Intelligent energy for Europe" 2003-2006 multiannual programme and, in particular, ALTENER and STEER,
- D. whereas the EU proposed, at the Johannesburg Summit, to raise the threshold for the production of alternative energies to 15% by 2010,
- E. whereas a EU strategy for the substitution of conventional diesel and gasoline is therefore needed to improve the security of energy supply, but also to reduce the environmental impact of transport, especially greenhouse gas emissions,
- F. whereas such a strategy has to be accompanied by measures to improve fuel efficiency of vehicles,
- G. whereas the success of any new transport fuel technology is fundamentally dependent on broad availability, competitive price structures and user satisfaction and the Commission must take all necessary measures to facilitate and promote these for the new technologies,

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

<sup>2</sup> OJ C 140 E, 13.6.2002, p. 543

<sup>3</sup> OJ C 53 E, 28.2.2002, p. 397

<sup>4</sup> OJ C 210 E, 6.7.1998, p. 215

especially since innovations and new initiatives to a large extent come from small and new enterprises,

- H. whereas the fact that LPG fuel is derived from two sources (refining or extraction) is an advantage from the point of view of supply problems,
- I. whereas the strongest growth is expected to be for ethanol and biodiesel (the IEA forecast an annual growth rate on 10.9%),
  - 1. Welcomes the Commission communication on alternative fuels for road transportation as a first step but emphasises that the objective of the entire strategy from the outset should be the achievement of a low- to zero-emission transport sector;
  - 2. Supports an EU strategy aiming at increasing the market share of alternative fuels;
  - 3. Calls on the Council of the European Union to adopt the proposed directive on the promotion of the use of biofuels for transport and the directive with regard to the possibility of applying a reduced rate of excise duty on biofuels without any delay;
  - 4. Agrees with the Commission that biofuels are a short-, medium- and long-term option for the development of alternatives to petroleum products in transport;
  - 5. Considers that biofuels represent an indigenous, CO<sub>2</sub>-neutral fuel the promotion of which will have a positive impact on job creation and the agricultural sector, all the more considering that some crops (such as rape or wheat) used for the production of biofuels deliver protein-rich feedstuff as a by-product;
  - 6. Considers that the increased use of biofuels and alternative fuels must be accompanied by a careful analysis of the environmental effects of the cultivation, processing and use of raw materials; observes that increased use appears to be appropriate above all if the analysis of the environmental effects shows clear benefits compared with the use of conventional fuels; considers, in particular, that the questions of land use, intensification of farming, the relationship to alternative sustainable land use, water conservation, energy efficiency, potential emission of greenhouse gases, combustion characteristics and particle formation should be examined, whilst account must also be taken of the contribution to ensuring security of supply;
  - 7. Considers that the conversion of all biomass, including biomass from organic waste material, into automotive fuel, hydrogen being one of several realistic alternatives, is a promising technology, which to a great extent either already exists within the EU or is in the final stage of technological development as the raw materials are available at a low price, waste management problems (including cost) can be avoided and the raw materials can be found easily, even in thinly populated areas; points out that, while the biodegradable fraction of waste is an important raw material for biofuels, the extent of possible contamination of the waste must be taken into account in laying down quality standards, in order to prevent specific components from resulting in damage to vehicles and/or higher emissions;
  - 8. Considers that at present, not all the biofuels available on the market meet strict environmental efficiency criteria. In some cases their production is linked to high energy

input and greenhouse gas emissions. However, technological advances in this area can lead to improvements. Consequently research and technological development in the field of the sustainability of biofuels must be promoted;

9. Takes the view that the parallel development of different options for alternative transport fuels will contribute to the security of energy supply;
10. Considers that the use of alternative fuels for public services offers a useful contribution to the promotion of a new technology as it helps gain practical experience and improves its acceptance by the public;
11. Calls on the Commission to intensify the dialogue with the car industry in order to improve fuel efficiency of vehicles including the use of lighter, stronger materials and - if necessary - to propose appropriate measures;
12. Considers that developing the use of natural gas and LPG contributes to the diversification of energy supply, as gas is distributed more uniformly across the world and comes, to some extent, from countries whose geopolitical situation is more stable;
13. Considers that promoting greater use of other fuels, such as LPG, methane and biofuels, in areas with particular environmental problems could offer a short to medium-term solution which could offer benefits in terms of energy supply and the environment;
14. Calls on the Commission and the Member States to encourage research on natural gas, for example through the Sixth Framework Programme, with a view to reducing leakages at the distribution, storage and vehicle refuelling stage;
15. Calls on the Commission also to recognise the role of LPG as an alternative fuel, in view of its environmental and energy aspects and its high potential for market penetration, as a resource that is already available for the solution of problems relating to atmospheric pollution and security of supply;
16. Calls on the Commission and the Member States to encourage research on LPG, for example through the Sixth Framework Programme, in order to achieve increasingly efficient technologies;
17. Calls on the Commission to rapidly develop and announce a long-term fiscal strategy for biofuels and alternative fuels that takes into account a life-cycle approach, thus sending a clear signal regarding investments in this sector; in this regard recommends that a new system for fiscal policy of fuels should be considered where the basis for fiscal policy should be related to the level of emissions and to the energy content, thus avoiding problems with widely differing energy content per litre or cubic metre among traditional and new, alternative fuels;
18. Recommends that, in the context of a fiscal policy encouraging and promoting the use of environmentally sustainable energy solutions, the Commission should bear in mind the environmentally friendly aspects of LPG fuel, as an alternative energy resource which generates low CO<sub>2</sub> emissions and is already available for the solution of problems connected with atmospheric pollution, particularly in big urban centres;

19. Disagrees with the Commission that hydrogen is only an option for the medium- to long-term, as most of the technology is either already developed or in the final stages of development, and therefore urges the Commission and the Member States to step up their efforts to develop the use of hydrogen in order to encourage the entry into the market of zero-emission vehicles;
20. Considers that development of and research on fuel cells offers very promising prospects in view of their negligible environmental impact and calls on the Member States to consider the possibility of providing for tax exemption in that sector;
21. Considers that it is important to encourage, in the short and medium-term, the use of hydrogen as a motor fuel, particularly for public transport until fuel cell cars come onto the market, scheduled for 2004, but insists that, where methanol is used as a vector for the hydrogen, it shall be derived primarily from biomass or other renewable sources and not from natural gas or other conventional fuels;
22. Calls on the Commission and the Member States to make the necessary efforts to construct adequate infrastructures for the distribution of hydrogen and to improve storage systems (which currently require large and heavy tanks);
23. Encourages the implementation of pilot and demonstration projects for natural gas, fuel cells and hydrogen, such as the project co-funded by the Commission for the deployment of 30 hydrogen-powered buses in ten European cities;
24. Considers that research on the technology for hybrid motor vehicles should be improved and continued, as such vehicles are able to take advantage of the best features of gasoline- or diesel-fuelled engines and electric vehicles;
25. Calls on the Commission to be open for new solutions with regard to fuels and production of fuels with lower environmental impact, for example by ensuring that research programmes do not discriminate against new project ideas, by identifying and addressing various barriers for introduction, and by ensuring that new technologies and new enterprises are not discriminated against in relevant groups and organisations;
26. Notes the important opportunity offered to European industry to be the world leader in the production of vehicles using alternative fuels or systems;
27. Supports the establishment of a formalised contact group for the further introduction of alternative fuels and the promotion of new developments in this area, and asks the Commission that such a Group of experts will have a balanced representation of the different actors such as industry sectors, consumers and independent experts;
28. Calls on the Commission to formulate, drawing on the work of the official contact group, an action plan to encourage greater use of gas fuels (methane and LPG) for both private and public transport, and calls on the Member States to consider the introduction of tax incentives for the use of such fuels;
29. Stresses the need for an EU-wide information policy on the advantages of alternative transport fuels, such as the reduction of greenhouse gas emissions, and better security of energy supply;

30. Instructs its President to forward this resolution to the Council and Commission.

## EXPLANATORY STATEMENT

This communication should be seen in the context of the various possible means of improving the security of energy supplies and reducing greenhouse gas emissions.

As the Commission acknowledges in its communication, any radical changes in fuel supply or engine technology for road transport would raise a number of problems. Families use cars for many purposes; over the years, both cars and fuel have become safer and cheaper, and very few people would be prepared to sacrifice these advantages.

Freight transport is governed by different criteria. As an economic sector subject to strong internal competition, cost and reliability are key factors. Consequently, any alternative fuel or engine technology will have to be competitive in order to penetrate the market. Distribution is also a crucial factor, as we are now used to swift service and widespread availability.

The various options involving the use of any alternative fuel will require different types and levels of investment in infrastructure and equipment. Replacing a few percent of diesel or gasoline with biodiesel or ethanol is the simplest option, as establishing plants to produce such alternative fuels would be the only 'long-term' investment required. The same applies to the investment required for the use of natural gas and LPG, given that the technology exists already, as does the distribution system, which would simply have to be developed. Fuel cells fuelled by hydrogen, on the other hand, could be regarded as the most complicated option, as it would require alternative engine technology as well as substantial investment in plants to product the hydrogen and a totally new distribution system. Your rapporteur believes, however, that this sector offers the greatest possibilities for developing a competitive and environmentally sustainable leading-edge technology which could establish Europe as the world leader in the field.

The options examined in the communication are: biofuels, natural gas and hydrogen. However, it also calls for the development of other fuels such as biogas, bioethanol, LPG and other leading-edge technologies, in particular the technology of hybrid cars (combining combustion and electric drives), which offers a degree of fuel saving comparable to that which could be provided by alternative fuels.

Hybrid cars are designed to take advantage of the best aspects of the gasoline (or diesel) engine and the electric car, while at the same time avoiding their disadvantages. Hybrid cars have two engines, an internal combustion engine and an electric motor. Depending on driving circumstances (load factor, acceleration) the car automatically switches to the most efficient mode.

Because of the semi-continuous charging of the batteries during driving, these can be much smaller (and cheaper) than in an electric car. However, the two engine systems and other sophisticated technical features increase the cost of hybrid cars. Until now, the relatively few hybrid cars on the market have been heavily subsidised. It is thought that high-volume production could bring prices down. Moreover, with cars of this kind it is possible to use the electric drive in congested city centres with high levels of pollution and switch to conventional fuel for long journeys, thus avoiding the inconvenience of electrical cars as regards autonomy and speed.

### **Biofuels**

Ever since the first oil crisis in 1973 biomass has been considered as an alternative to fossil fuel as a source of energy.

The Commission points out that biological material can be used as fuel for road transport in several ways:

- plant oils (colza, soybean, sunflower, etc.) can be converted into a diesel substitute which can either be used in a mixture with conventional diesel or burnt as pure biodiesel;
- sugar beets, cereals and other crops can be fermented to produce alcohol (bio-ethanol) which can either be used as a component in gasoline, as motor fuel in pure form, or as a gasoline component after being converted to ETBE through reaction with isobutene (a refining by-product). There is reason to believe that future developments will also make it possible to produce economically competitive bio-ethanol from wood or straw material;
- organic waste material can be converted into energy which can be used as automotive fuel: waste oil (cooking oil) into biodiesel, animal manure and organic household waste into bio-gas and plant waste products into bio-ethanol. Quantities are limited in most cases, but raw materials are free and waste management problems (and costs) will be reduced;
- technological progress indicates that in the medium term, other liquid and gaseous biofuels produced by thermochemical processing of biomass such as biodimethylether, biomethanol, biooils (pyrolysis oils) and hydrogen could become competitive.

Biofuels are certainly one of the most promising alternative fuels which offer a number of advantages and chances. According to the Commission communication "biofuels are for the short and medium term the only option, therefore launching the appropriate policy instruments [including tax cuts] to promote the introduction of biofuels will give a clear signal that the Community is serious about developing alternatives to petroleum products in transportation...there are no objective reasons for further delay". It is to be hoped that the Commission and the Danish Presidency will do everything they can to ensure that work on the biofuels directives presses ahead.

## Hydrogen

Research carried out in recent years has shown the great potential of hydrogen as a fuel for motor vehicles. In particular, it might make it possible to meet the challenge of producing zero-emission cars.

However, as in the case of electricity, the advantage of using hydrogen as a fuel, as far as security of supply or greenhouse gas emissions are concerned, depends on how the hydrogen is produced. Obviously, if it is produced using non-fossil fuels (nuclear or renewable energy) it will have beneficial effects in terms of security of supply and CO<sup>2</sup> emissions.

As the Commission points out in its communication, hydrogen production involves well-established industrial processes, but problems remain in terms of storage, which currently requires large and heavy tanks, and distribution, which requires expensive investment in infrastructure.

Hydrogen and fuel cells offer a long-term solution, but require further technological development which will not be possible without substantial investment in research by the EU and the Member States, infrastructure investment and tax incentives.

## Gas

Gas fuels are characterised by the low carbon dioxide emissions associated with their use (15-20% lower than gasoline in the case of natural gas, and 15% lower in the case of LPG). Moreover, the exhaust gases they produce contain lower levels of pollutants (carbon monoxide, unburned hydrocarbons, sulphur dioxide, nitrogen oxides, particulates, volatile organic compounds). Moreover, there are no benzene and polycyclic aromatics in gas fuels.

From the point of view of security of supply, it is obvious that the use of natural gas, even if much of it is imported, could reduce dependency on oil and achieve greater diversification of supply countries, as gas resources are distributed more uniformly around the world than oil resources.

Your rapporteur considers that developing the use of LPG offers excellent prospects. Although LPG can be obtained either by the refining process or the extraction process, it will be possible to meet increased demand for LPG only by importing LPG extracted from natural gas. An important contribution could be made, therefore, by the 'naturally' available LPG in Europe, which should be used as motor fuel rather than as refinery fuel or other low-value energy source.

Moreover, it is obvious that the fact that LPG can be imported in trains or vessels would make it possible to significantly diversify the supply base, thus protecting energy supply security.

Modern gas fuel technology also offers comparable performance, reliability and security - subject to well-established technical rules and regulations - to vehicles that run on other fossil fuels. To significantly increase the use of gas fuels as a substitute for conventional fuels, a policy of providing incentives to encourage greater use of methane and LPG will be required, which would generate economic advantages for consumers in order to help achieve the objective of reducing greenhouse gas emissions.

To sum up, your rapporteur supports the objectives set out in the Commission's communication and is in favour of setting up an official contact group which should, however, represent a cross section of all the industry and political stakeholders and consumers concerned. Moreover, the contact group should encourage the development of the various sectors while encouraging the Member States to pursue a diversified energy policy that makes full use of research and fiscal incentives with a view to reducing harmful emissions.