COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 4.12.2008
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2008/0229 (COD)

Proposal for a

# DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

## on Stage II petrol vapour recovery during refuelling of passenger cars at service stations

{SEC(2008) 2937}
{SEC(2008) 2938}

(presented by the Commission)

# EXPLANATORY MEMORANDUM

## 1. CONTEXT OF THE PROPOSAL

### 1.1. General context

This legislative proposal aims at recovering petrol vapour which is emitted to the atmosphere during the refuelling of passenger cars at service stations (so called "Stage II Petrol Vapour Recovery or PVR"). The emissions of volatile organic compounds contained in petrol contribute to local and regional air quality problems (benzene and ozone) for which Community air quality standards and objectives exist. Ground level ozone is a pollutant which crosses national borders and is also the third most important greenhouse gas. Benzene is a known human carcinogen.

The proposal has been prepared following commitments made by the College in:

– the Thematic Strategy on Air Pollution[1];

– the Commission's proposal to amend Directive 98/70/EC on petrol and diesel quality[2] which aims to facilitate a greater uptake of biofuels and bioethanol in particular by relaxing the vapour pressure requirements of petrol. The Commission recognised that this could lead to greater emissions of volatile organic compounds and indicated that Stage II PVR would be proposed to offset any increased emissions.

– a statement accompanying a new directive on ambient air quality[3] in which the Commission recognised the importance of tackling air pollution at source in order to attain air quality objectives and which proposed several new Community source-based measures including Stage II PVR.

### 1.2. Existing provisions in the area of the proposal

Directive 94/63/EC aims to recover petrol vapour otherwise emitted to the atmosphere from the storage and distribution of petrol between terminals and service stations (so called "Stage I petrol vapour recovery"). The petrol vapour displaced when a service station receives a new delivery of petrol is returned to the road tanker or mobile vessel and returned to the terminal where it can be redistributed.

### 1.3. Consistency with other policies and objectives of the Union

The proposal is consistent with the Community's policies on air quality and the making further progress towards the attainment of levels of air quality that do not give rise to significant impacts on health and the environment as stipulated in the Community's Sixth Environmental Action Programme. The proposal is also in line with the three pillars of the Lisbon Strategy as this will encourage a greater demand and development of Stage II vapour recovery technologies.

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1 Section 4.2.1.2 on page 9 of COM(2005) 446 of 21 September 2005.

2 Section 3(4) on pages 7 & 8 of COM(2007) 18 of 31 January 2007.

3 Directive 2008/50/EC on ambient air quality and cleaner air for Europe, OJ L152, 11.6.2008, p. 1 – 43.

## 2. CONSULTATION OF INTERESTED PARTIES

### 2.1. Consultation of interested parties

*2.1.1. Consultation methods, main sectors targeted and general profile of respondents*

A targeted consultation of key stakeholders took place by direct contact. These included, oil industry associations, Stage II PVR equipment manufacturers, environmental/transport NGOs, independent service station operators and motoring organisations amongst others. In addition, questions were also posted on the internet for the general public.

*2.1.2. Summary of responses and how they have been taken into account*

The responses spanned issues on health impacts of petrol vapour, the efficiency of Stage II equipment, the merits of automatic monitoring equipment and the cost effectiveness of the various options for installing stage II PVR equipment. These responses have been taken directly into account in drafting the key elements of the attached proposal notably in relation to service stations under residential accommodation, the lower cut-off for affected service stations and the automatic monitoring of in-service performance of equipment.

A summary of the questions and responses can be found at: http://ec.europa.eu/environment/air/transport/petrol.htm

### 2.2. Collection and use of expertise

*2.2.1. Scientific/expertise domains concerned*

Expertise from the oil industry and Stage II PVR equipment manufacturers and from consultants who prepared estimates of the costs and benefits of options for Stage II PVR controls.

*2.2.2. Methodology used*

Statistical data on numbers and sizes of service stations coupled with cost estimates of Stage II equipment was used to calculate the overall costs of applying Stage II PVR controls over time as well as the amount of petrol vapour abated. The damage costs of the emitted petrol vapour were monetised using a simple average damage cost function based upon the impacts associated with ground level ozone. Impacts due to benzene were not quantified.

*2.2.3. Main organisations consulted*

European oil industry associations, European Stage II PVR equipment manufacturers, environmental/transport NGOs, independent service station operators and motoring organisations.

*2.2.4. Summary of advice received and used*

Two separate consultants were asked to provide advice to the Commission on the costs and cost effectiveness of various Stage II PVR options. This information is

summarised in two separate reports from 2005 and 2008. The latter report also relied upon recent information associated with the implementation of Stage II PVR in the Member States

*2.2.5. Means to make advice available to the public*

Both reports are available on the Commission's web site: http://ec.europa.eu/environment/air/transport/petrol.htm

### 2.3. Impact assessment

The impact assessment looked at the costs and benefits of the following options:

(1) Do nothing.

(2) Install Onboard Refuelling Vapour Recovery (ORVR) in passenger cars and light commercial vehicles.

(3) Install PVR Stage II equipment at

(a) All new and substantially refurbished service stations with a throughput greater than 500 $m^3$ of petrol per annum.

(b) At all new and substantially refurbished service stations with a throughput greater than 500 $m^3$ of petrol per annum and larger existing stations (i.e. with a throughput in excess of 3000 $m^3$ per annum)..

(c) Option (b) and service stations situated in or under residential accommodation.

(d) Option (c) with automatic monitoring of all stage II equipment that would restrict petrol sales if the equipment is not functioning correctly.

The detailed evaluation of the options is included in the Impact Assessment accompanying this proposal. It will be available at the following web site: http://ec.europa.eu/environment/air/transport/petrol.htm

## 3. LEGAL ELEMENTS OF THE PROPOSAL

### 3.1. Summary of the proposed action

The proposal would oblige the installation of Stage II petrol vapour recovery equipment (i) at new and refurbished stations above 500$m^3$ throughput per annum of petrol; (ii) require retrofitting of existing stations with a throughput above 3000 $m^3$ by 2020; and (iii) require all new or substantially refurbished stations situated under residential accommodation to equip with Stage II controls irrespective of size; (iv) no obligation to install automatic monitoring of Stage II PVR equipment but permit a longer period between inspections if it is installed.

It is clear that obliging the larger existing stations to install Stage II controls before 2020 imposes additional costs but also delivers substantially greater emissions reductions albeit with a slightly worse cost-effectiveness. However, the costs are relatively modest for both options and of the order of €20-30 million per annum in 2020.

Whilst it is not possible to calculate directly the costs associated with installing Stage II PVR at all stations situated under residential accommodation, the illustrative calculation shows that the costs of a scheduled retrofit of a small service station would be similar to the average for the other options considered. However, the costs of an unscheduled retrofit are substantially higher and do not justify the imposition of a time limit. However, in the 10 years following adoption of any new Directive on Stage II PVR, over two thirds of such stations would have been expected to have undergone a scheduled refurbishment. The proposal would also maximise the fact that service stations sited under residential accommodation must already install Stage I PVR irrespective of their size.

Whilst automatic monitoring would certainly guarantee the delivery of the intended benefits in practice, there is uncertainty over the costs of such systems and whether there are not simpler and cheaper systems that can deliver as well. This conclusion was supported by the findings of ENTEC report which determined a 50% worsening in cost-effectiveness for the mandatory inclusion of automatic monitoring[4]. However, there should be less need for periodic inspection which would represent a cost saving for those installing automatic monitoring equipment.

### 3.2. Legal basis

Article 175 of the Treaty is the appropriate legal basis given the clear environmental nature of the proposal.

### 3.3. Subsidiarity principle

The subsidiarity principle applies insofar as the proposal does not fall within the exclusive competence of the Community. The objectives of the proposal cannot be sufficiently achieved by the Member States alone for the following reasons:

– Ground level ozone is a transboundary air pollutant formed in situ in the atmosphere from precursor emissions of volatile organic compounds (e.g. petrol vapour) and nitrogen oxides. Emissions of petrol vapour in one country can lead to air quality problems in neighbouring countries. Coherent action by all Member States is therefore required in tackling ground level ozone.

– The directive governing the quality of petrol and diesel sold in the EU has Article 95 of the Treaty as its legal basis and applies uniformly across the EU. The Commission has proposed a relaxation of the vapour pressure requirements of petrol in order to promote a greater use of bioethanol. This could however lead to greater emissions of volatile organic compounds even in those countries where Stage II PVR controls are already implemented. As such, Community action is required to address this potential increase in VOC emissions.

[4] Table 6.24, p. 55 of the ENTEC report prepared for the Commission (May 2005).

### 3.4. Proportionality principle

The proposal does not go beyond what is necessary in order to achieve the objective of ensuring the reduction of petrol vapour emissions from refuelling activities. Only the minimum technical parameters are specified whilst leaving the detailed choice of technologies and means to the discretion of the Member States.

### 3.5. Choice of instrument

A proposal for a directive is most appropriate. There are several technological ways in which Stage II PVR can be implemented in practice. In addition, a substantial number of Member States already have national legislation for Stage II PVR in place. There is no need to change the approach taken by these Member States although numerical values for one or more technical parameters may need to be revised. As such, a directive would maximise the discretion of the Member States on how best to implement the proposal, whilst also leaving the possibility for Member States to impose stricter controls in the event that these are needed in response to air quality problems.

## 4. BUDGETARY IMPLICATION

There are no implications for the Community budget.

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**on Stage II petrol vapour recovery during refuelling of passenger cars at service stations**

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 175 thereof,

Having regard to the proposal from the Commission[5],

Having regard to the opinion of the European Economic and Social Committee[6],

Having regard to the opinion of the Committee of the Regions[7],

Acting in accordance with the procedure laid down in Article 251 of the Treaty[8],

Whereas:

(1) Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environmental Action Programme[9] established the need to reduce air pollution to levels which minimise harmful effects on human health and the environment.

(2) Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe[10] lays down air quality objectives for ground level ozone and benzene and Directive 2001/81/EC of the European Parliament and of the Council of 23 October 2001[11] lays down national emission ceilings for volatile organic compounds which contribute to the formation of ground level ozone. Whereas the emissions of volatile organic compounds, including petrol vapour, in one Member State contribute to air quality problems in other Member States.

(3) Directive 94/63/EC of 20 December 1994 on the control of volatile organic compound (VOC) emissions resulting from the storage of petrol and its distribution from terminals to service stations[12] (Stage I petrol vapour recovery) aims to recover petrol

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5 OJ C […], […], p. […].
6 OJ C […], […], p. […].
7 OJ C […], […], p. […].
8 OJ C […], […], p. […].
9 OJ L 242, 10.9.2002, p. 1.
10 OJ L 152, 11.6.2008, p. 1.
11 OJ L 309, 27.11.2001, p. 22.
12 OJ L 365, 31.12.1994, p. 24.

vapour emitted from the storage and distribution of petrol between oil terminals and service stations.

(4) Petrol vapour is also emitted during the refuelling of passenger cars at service stations and should be recovered in a manner consistent with the provisions of Directive 94/63/EC.

(5) Existing service stations may need to adapt existing infrastructure and it is preferable to install vapour recovery equipment when they undergo major refurbishment so as to reduce costs, however, larger existing stations are better able to adapt and should install petrol vapour recovery earlier given they make a greater contribution to emissions. New service stations can integrate petrol vapour recovery equipment during the design and construction of the service station and can therefore install petrol vapour recovery equipment immediately.

(6) It is appropriate to establish a uniform minimum level of petrol vapour recovery in order to deliver a high level of environmental benefit and to facilitate trade in petrol vapour recovery equipment.

(7) Periodic inspections of all installed stage II petrol vapour recovery equipment should be performed in order to ensure that petrol vapour recovery equipment delivers real emissions reductions.

(8) Member States should lay down rules on penalties applicable to infringements of the provisions of this Directive and ensure that they are implemented. The penalties should be effective, proportionate and dissuasive.

(9) Due to the transboundary nature of air pollution, the objectives of the action to be taken to reduce emissions of petrol vapour to the atmosphere cannot be sufficiently achieved by the Member States but can be better achieved at Community level. Accordingly, the Community may adopt measures in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principle of proportionality as set out in that Article, this Directive does not go beyond what is necessary in order to achieve those objectives.

HAVE ADOPTED THIS DIRECTIVE:

*Article 1*

**Subject matter**

This Directive lays down measures aimed at reducing the amount of petrol vapour emitted to the atmosphere during the refuelling of motor vehicles at service stations.

*Article 2*

**Definitions**

For the purposes of this Directive:

1. 'petrol' means petrol as defined in Article 2(1) of Directive 98/70/EC of the European Parliament and of the Council[13];

2. 'petrol vapour' means any gaseous compound which evaporates from petrol;

3. 'service station' means a service station as defined in Article 2(f) of Directive 94/63/EC;

4. 'existing service station' means a service station which is built or for which an individual planning permission, construction licence or operating licence is granted before the date referred to in the second subparagraph of Article 7(1);

5. 'new service station' means a service station which is built or for which an individual planning permission, construction licence or operating licence is granted after the date referred to in the second subparagraph of Article 7(1).

6. 'Stage II petrol vapour recovery system' means equipment aimed at recovering the petrol vapour displaced from the fuel tank of a motor vehicle during refuelling at a service station and which transfers that petrol vapour to an underground storage tank at the service station or back to the petrol dispenser for resale;

7. 'hydrocarbon capture efficiency' means the fraction of petrol vapour captured by the Stage II petrol vapour recovery system compared to the amount of petrol vapour that would otherwise be emitted to the atmosphere in the absence of such a system and expressed as a percentage;

8. 'vapour/petrol ratio' means the ratio between the volume at atmospheric pressure of petrol vapour passing through the Stage II petrol vapour recovery system and the volume of petrol dispensed;

9. 'throughput' means the total annual quantity of petrol unloaded from mobile containers into a service station;

*Article 3*

**Service stations**

1. Member States shall ensure that any new service station shall be equipped with a Stage II petrol vapour recovery system if its actual or intended throughput is greater than 500 $m^3$ per annum. However, all new service stations situated under permanent living quarters or working areas shall be equipped with a Stage II petrol vapour recovery system irrespective of their actual or intended throughput.

2. Member States shall ensure that any existing service station with a throughput greater than 500 $m^3$ per annum which undergoes a major refurbishment shall be equipped with a Stage II petrol vapour recovery system at the time of the refurbishment.

[13] OJ L 350, 28.12.1998, p. 58.

3. Member States shall ensure that an existing service station with a throughput in excess of 3000 $m^3$ per annum shall be equipped with a Stage II petrol vapour recovery system by no later than 31 December 2020.

*Article 4*

**Minimum permitted level of petrol vapour recovery**

1. Member States shall ensure that the hydrocarbon capture efficiency of a Stage II petrol vapour recovery system is equal to or greater than 85%.

2. For Stage II petrol vapour recovery systems where the recovered petrol vapour is transferred to an underground storage tank at the service station, the vapour/petrol ratio shall be equal to or greater than 0,95 but less than or equal to 1,05.

*Article 5*

**Periodic inspection and compliance**

1. Member States shall ensure that the hydrocarbon capture efficiency is tested at least once per annum.

2. Where an automatic monitoring system has been installed, the Member States shall ensure that the hydrocarbon capture efficiency is tested at least once every three years. The automatic monitoring system shall automatically detect faults in the proper functioning of the Stage II petrol vapour recovery system and in the automatic monitoring system itself, indicate faults to the service station operator and automatically stop the flow of petrol from the faulty dispenser if the fault is not rectified within 7 days.

*Article 6*

**Penalties**

Member States shall lay down the rules on penalties applicable to infringements of the national provisions adopted pursuant to this Directive and shall take all measures necessary to ensure that they are implemented. The penalties provided for must be effective, proportionate and dissuasive. Member States shall notify those provisions to the Commission by the date specified in the first subparagraph of Article 7(1) at the latest and shall notify it without delay of any subsequent amendment affecting them.

*Article 7*

**Transposition**

1. Member States shall adopt and publish, by [30 June 2012] at the latest, the laws, regulations and administrative provisions necessary to comply with this Directive. They shall forthwith communicate to the Commission the text of those provisions and a correlation table between those provisions and this Directive.

Member States shall apply those provisions from [1 July 2012].

When Member States adopt those provisions, they shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication. Member States shall determine how such reference is to be made.

2. Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive.

*Article 8*

**Entry into force**

This Directive shall enter into force on the day of its publication in the *Official Journal of the European Union*.

*Article 9*

This Directive is addressed to the Member States.

Done at Brussels, […]

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| *For the European Parliament* | *For the Council* |
| *The President* | *The President* |
| *[…]* | *[…]* |