Manual of European Environmental Policy

The following pages are a section from the Manual of European Environmental Policy written by the Institute for European Environmental Policy.

The Manual was published by Earthscan/Routledge from 2010 to 2012. It was designed as an on on-line interactive reference work and annual printed versions were also produced.

This section is the text of the Manual as published in 2012. It is therefore important to note the following:

- The contents have not been updated since 2012 and no guarantee is given of the accuracy of the contents given potential subsequent developments.
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The Manual should be cited as follows:

Farmer, A.M. (2012) (Editor). Manual of European Environmental Policy. 1043pp. Routledge, London.

Volatile organic compounds from petrol

Formal reference 94/63/EC (OJ L365 31.12.94)	Directive on the control of VOC emissions from the storage and distribution of petrol (Stage I)
proposed 30.7.92 – COM(92)277 (OJ C/199/277/3)	
Legal base	Article 114 TFEU(originally Article 100a EEC Treaty)
Binding dates Formal compliance Standards apply to 'new' facilities (not authorized or operational before 31 December 1995) Standards apply to 'existing' facilities (authorized or operational before 31 December 1995)	 31 December 1995 31 December 1995 31 December 1998/2001/2004 (see Table 1)
2009/126/EC (OJ L285 31.10.09)	Directive on Stage II petrol vapour recovery during refuelling of motor vehicles at service stations
Legal base	Article 192 TFEU (originally Article 175(1) TEC)
Binding dates Entry into force Formal compliance	 31 October 2009 1 January 2012

Purpose of the Directive

The Directives are intended to reduce emissions of volatile organic compounds (VOCs) from the storage of petrol and its distribution from terminals to service stations. This is pursued through the specification of standards applicable to the operations, installations and transport used for the storage, loading and distribution of petrol. The Directive applies to road, rail and inland waterway transportation, but not to marine shipping.

The Directives form part of a developing Community VOCs strategy enabling the Community to comply with the VOC Protocol to the United Nations Economic Commission for Europe (UNECE) Convention on Long-Range Transboundary Air Pollution, and with the Fifth Action Programme VOC reduction targets of 10 per cent by 1996 and 30 per cent by 1999 (relative to 1990).

Summary of the Directive

Stage I: petrol vapour recovery

The preamble to Directive 94/63/EC states that the storage and distribution of petrol at the time was leading to emissions of some 500,000 tonnes of VOCs per year across the Community, or 5 per cent of the total anthropogenic emissions. The Directive sets out controls to reduce these emissions in four areas: storage installations at terminals; equipment for loading and unloading mobile containers at terminals; mobile container standards; and loading into storage installations at service stations. Technical and operational standards are defined in a number of annexes, which are subject to amendment by the Commission in cooperation with a committee of Member States' representatives.

With the exception of controls related to mobile containers, Member States are permitted to enforce more stringent requirements where necessary for protection of health and the environment, or to apply controls different from those set out in the Directive, provided they have at least the same efficiency (as expressed by the 'target reference value' for petrol losses). No such variations are allowed in relation to mobile containers, in order to ensure the free trade in petrol and equipment across the Community.

The Directive allows for derogations for some of the provisions for specified Member States.

The European Commission can adopt measures, designed to amend non-essential elements of this Directive in accordance with the regulatory procedure with scrutiny (i.e. 'comitology') following Regulation (EC) No 1137/2008.

Storage installations at terminals

Storage installations (stationary petrol tanks) at terminals must be designed and operated in accordance with requirements set out in an annex. These controls are designed to reduce annual petrol loss attributable to loading and storage to below a 'target reference value' of 0.01 per cent of the weight of throughput.

Tanks without vapour recovery units must be painted in a colour with a radiant heat reflectance of 70 per cent or more, with scope for derogations in special landscape areas. Primary and secondary seals with a designated performance specification are required for tanks with external floating roofs. All new storage installations where vapour recovery is required must be either fixed roof tanks connected to a vapour recovery unit or double-sealed floating roof tanks. Existing fixed roof tanks must be connected to a vapour recovery unit or have an internal floating roof.

Loading and unloading of mobile containers at terminals

A second annex imposes standards on equipment for loading and unloading mobile containers at terminals, with the objective of reducing annual petrol loss to below the 'target reference value' of 0.005 per cent of the weight of throughput. Displacement vapours from mobile containers must generally be returned to a vapour recovery unit for regeneration, with certain exemptions. The Directive specifies a maximum vapour concentration in exhaust from vapour recovery units of 35 g/m^3 (hourly average).

Competent authorities are made responsible for ensuring that measurement methods and frequency comply with defined requirements, and that equipment is checked regularly and shut down on discovery of vapour leaks. In addition, all terminals with loading facilities for road vehicles must be equipped with at least one gantry meeting specifications for bottom-loading of tankers (all gantries must comply by 31 December 2004). The specifications are set out in an annex covering couplings, loading conditions, overfill detection, location of connections and safety interlocks. Member States may grant derogations exempting certain terminals from the controls on loading and unloading of mobile containers.

Mobile containers

With some scope for derogations, mobile containers must be designed and operated so as to retain residual vapours after unloading and to accept and retain vapours from storage tanks at service stations or terminals. When a container has been unloaded and is subsequently to be used for a product other than petrol, venting may be permitted where it is unlikely to contribute significantly to environmental or health problems. Competent authorities must ensure that road tankers and mobile containers are periodically inspected.

Loading into storage installations at service stations

Equipment must comply with the provisions of an annex, designed to reduce petrol loss to below the 'target reference value' of 0.01 per cent of the weight of throughput. Vapours displaced by the delivery of petrol at service stations or intermediate storage facilities must be returned to the container delivering the petrol. Member States may grant derogations for certain service stations.

Compliance dates

Deadlines for compliance vary according to the size and type of facilities and other variables, as shown in Table 1. Reports on the implementation of the Directive are to be prepared in accordance with the Standardized Reporting Directive 91/692/EEC (see section on implementation and enforcement of legislation). The Commission is invited to submit proposals for amendment of the Directive, including application to ships, in its

first report.

Table 1. Compliance dates for VOC controls

Date	Storage installations at terminals	Loading and unloading of mobile containers at terminals	Mobile containers	Loading into storage installations at service stations
31 December 1995	New installations	New terminals	New containers	New stations
31 December 1998	Existing installations of throughput >50,000 tpa	Existing installations of throughput >150,000 tpa	Existing rail tankers and vessels*	Existing installations of throughput >1,000 m^3pa or under work or living areas
31 December 2001	Existing installations of throughput >25,000 tpa	Existing installations of throughput >25,000 tpa loading road/rail tankers		Existing installations of throughput >500 m^3pa
31 December 2004	All other existing installations	All other existing terminals loading road/rail tankers		All other existing stations

*Controls apply to existing road tankers when retrofitted for bottom loading.

Stage II petrol vapour recovery

Directive 2009/126/EC obliges numerous filling stations to install equipment recovering harmful gases that escape when refuelling cars and other vehicles. It defines the 'Stage II petrol vapour recovery system' as '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 a storage tank at the service station or back to the petrol dispenser for resale'.

The Directive states different requirements for petrol stations according to their age. Any new service station (built on 1 January 2012 and after) has to be equipped with a Stage II petrol vapour recovery system. This is applicable if:

- Its actual or intended throughput is greater than 500 m^3/year; or

- Its actual or intended throughput is greater than 100 m^3/year and it is situated under permanent living quarters or working areas.

Furthermore, any existing service station which undergoes a major refurbishment must be equipped with a Stage II petrol vapour recovery system at the time of the refurbishment if:

- Its actual or intended throughput is greater than 500 m^3/year; or
- Its actual or intended throughput is greater than 100 m^3/year and it is situated under permanent living quarters or working areas.

Finally, any existing service station with a throughput in excess of 3,000 m^3/year shall be equipped with a Stage II petrol vapour recovery system by no later than 31 December 2018. These requirements do not apply to service stations used by the construction and delivery of new motor vehicles sector.

The Directive sets the minimum level of petrol vapour recovery. It must be at least 85 per cent of the petrol vapour capture efficiency. Then, for the transfer of petrol vapour to a 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.

It is a Member State's duty to ensure that the vapour capture installations are tested once a year. However, it is for the installation equipped with a Stage II petrol vapour recovery system to notify it to the consumers (the Directive suggests a display a sign, sticker or other notification on, or in the vicinity of, the petrol dispenser, informing consumers of that fact). The Commission has to review the implementation of the Directive by 31 December 2014 and, in particular:

- The 100 m^3/year threshold referred to in this Directive and Article 6(3) of Directive 94/63/EC.
- The in-service compliance record of Stage II petrol vapour recovery systems.
- The need for automatic monitoring equipment.

Development of the Directive

The Directive was developed as part of a Community strategy for the overall control of VOC emissions. The first element of the strategy was Directive 91/441/EEC on vehicle emissions, which also requested preparation of a Commission proposal on measures to reduce evaporation losses during the storage and distribution of motor fuels. The Commission has approached this assignment as a two-stage task, with Directive 94/63/EC representing the so-called 'Stage I' Directive. The Commission's original proposal for the Directive identified the intention to introduce parallel 'Stage II' controls for vehicle refuelling. The drafting of the Stage II proposal was subsumed into the broader auto-oil programme.

The Commission began drafting the proposal that eventually became Directive 94/63/EC in the late 1980s (i.e. before Directive 91/441/EEC formally requested this action). However, it was not until July 1992 that a proposal was put forward. The delay was due in part to a significant difference between the Commission's desired hydrocarbon emission limit for vapour recovery units of 35 g/m^3 and a German standard of 1.5 g/m^3. In order to overcome this problem, the Commission reportedly changed the legal basis of the draft proposal from the former Article 130S to the former Article 100A so that it would then be able to challenge the German standard as a barrier to trade[1]. The change to Article 100A was also justified by the Commission on the grounds that it would ensure the use of standard loading arms at petrol terminals, thereby avoiding a potential obstacle to cross-border trade in petrol[2].

When the proposal was finally put forward, it was in a form that was significantly more stringent in many respects than the final Directive. For example, the proposal's application of controls to ships as 'mobile containers' was not included in the Directive, which was a point of considerable contention. In addition, longer periods were allowed for the transition from top to bottom loading of tankers, and for compliance with certain provisions in relation to the size of the facilities affected (e.g. the proposal would have granted six years for existing service stations with a throughput greater than 200 m^3/year, while the Directive set the size limit at 500 m^3/year, effectively giving service stations of between 200 and 500 m^3/year an extra three years to comply).

The reduced applicability of the Directive to marine shipping appears to have resulted from lobbying by the oil industry. Some Member States were concerned that the costs of upgrading small service stations in rural areas might lead to closure of these facilities, creating an environmental penalty with vehicles having to travel further to buy petrol. This led to the provision in the Directive allowing Member States to grant a derogation for service stations with an annual throughput of 500 m^3/year in an area where emissions are 'unlikely to contribute significantly to environmental or health problems'. The oil industry reportedly would have preferred no derogations for small service stations for competitive reasons[3].

The Economic and Social Committee welcomed the proposal and endorsed its general principles and approach (OJ C73 15.3.93). The Parliament was also generally supportive in its first reading, approving the proposal with amendments intended to reduce the burden of compliance imposed on rural filling stations (OJ C194 19.7.93). The Council reached a common position on the proposal in June 1993, and it was at this stage that certain changes were introduced that later gave rise to the need for conciliation between the Council and the Parliament. These included: the removal of ships from the scope of the Directive; the exclusion of rail tankers from the provisions concerning retention of vapours; and the inclusion of provisions allowing various derogations, among which was a derogation extending the permissible period for use of dipsticks in road tankers.

The Parliament's opinion (OJ C91 28.3.94), which followed its second reading of the proposal, opposed these changes and included amendments designed to move the text back towards its former content. However, the Commission rejected all but one of the

Parliament's amendments (the exception being an amendment which allowed painting of storage tanks to be carried out as part of usual maintenance cycles, and which was ultimately included in the Directive). Under the co-decision procedure, the Council would then only have been able to adopt the Directive by reaching a unanimous position for each of the amendments on which the Commission had delivered a negative opinion. When the Council was unable to agree to the amendments, the conciliation procedure came into effect. Under the resulting compromise, it was agreed that the Community would propose measures applying to ships after discussions with its major trading partners, should the Marpol Convention not be revised to introduce such standards. The compromise on rail tankers was that they must retain vapours only if they supply petrol to service stations or to terminals with intermediate vapour storage. The Council's derogation in respect of dipsticks was retained in the conciliation text. The Directive was adopted in December 1994, some 29 months after it was first proposed.

On 4 December 2008, the Commission adopted a new legislative proposal to ensure that petrol vapour otherwise emitted to the air during refuelling of vehicles at service stations is recovered. The final act, Directive 2009/126/EC, was adopted on 21 October 2009.

Implementation of the Directive

Information on national legislation transposing Directive 94/63/EC can be found in the Member States' national execution measures. Information on national legislation transposing Directive 2009/126/EC can be found in the Member States' national execution measures.

The Commission published an implementation report in 2005, to identify the obstacles in the implementation in Member States, especially for recent Member States and accession countries. Also an assessment of the implementation of the Stage I Directive was published in April 2009. The report identified delays in implementation (Belgium, Cyprus and Greece) and issues (Finland, Sweden). In order to identify possible ways of simplification, the report examined three different options. One examined suppressing the technical requirements and replacing them with emissions limits that Member States would be free to meet in whichever way they would consider most appropriate. This would bring more flexibility at the national level, but it appeared that keeping the Directive as it is was supported by some consultees. Another looked at replacing the existing technical requirements with reference to external documents like the CEN standards. This option would be a loss of influence of the Commission in the definition of technical requirements. Finally, the report identified opportunities to further reduce the emissions of VOCs: the improvement of vapour recovery units and the lowering of legislative emission units.

Enforcement and court cases

No cases have been concluded in the European Court of Justice in relation to Directives 94/36/EC and 2009/126/EC.

Related legislation

The following legislation is related to Directives 94/36/EC and 2009/126/EC:

- The National Emission Ceilings Directive 2001/81/EC establishes requirements for national ceilings for VOCs, to which the controls in Directives 94/36/EC and 2009/126/EC contribute.
- Directive 1999/13/EC on volatile organic compounds from industry addresses on the other major source of VOCs, that is industrial emissions.
- The Air Quality Framework Directive 2008/50/EC has the objective of reducing tropospheric ozone pollution to which the emissions of VOCs contribute.

References

1. ENDS (1991) Controls on oil industry emissions bogged down in legal dispute, *ENDS Report* 202, November 1991.

2. ENDS (1992) Brussels moves on VOC releases from petrol distribution, *ENDS Report* 212, September 1992.

3. Department of the Environment (1993) Supplementary memorandum on European Community legislation No 8348/92, 22 June 1993.