



# EUROPEAN UNION

THE EUROPEAN PARLIAMENT

THE COUNCIL

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**DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
AMENDING COUNCIL DIRECTIVE 1999/32/EC  
AS REGARDS THE SULPHUR CONTENT OF MARINE FUELS**

**Directive 2012/33/EU**  
**of the European Parliament and of the Council**  
  
**of 21 November 2012**  
  
**amending Council Directive 1999/32/EC**  
**as regards the sulphur content of marine fuels**

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 192(1) thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

Having regard to the opinion of the European Economic and Social Committee<sup>1</sup>,

After consulting the Committee of the Regions,

Acting in accordance with the ordinary legislative procedure<sup>2</sup>,

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<sup>1</sup> OJ C 68, 6.3.2012, p. 70.

<sup>2</sup> Position of the European Parliament of 11 September 2012 (not yet published in the Official Journal) and decision of the Council of 29 October 2012.

Whereas:

- (1) The environmental policy of the Union, as set out in the action programmes on the environment, and in particular in the Sixth Environmental Action Programme adopted by Decision No 1600/2002/EC of the European Parliament and of the Council<sup>1</sup>, has as one of its objectives to achieve levels of air quality that do not give rise to significant negative impacts on and risks to human health and the environment.
- (2) Article 191(2) of the Treaty on the Functioning of the European Union (TFEU) provides that Union policy on the environment is to aim at a high level of protection, taking into account the diversity of situations in the various regions of the Union.
- (3) Council Directive 1999/32/EC of 26 April 1999 relating to a reduction in the sulphur content of certain liquid fuels<sup>2</sup> lays down the maximum permitted sulphur content of heavy fuel oil, gas oil, marine gas oil and marine diesel oil used in the Union.
- (4) Emissions from shipping due to the combustion of marine fuels with a high sulphur content contribute to air pollution in the form of sulphur dioxide and particulate matter, which harm human health and the environment and contribute to acid deposition. Without the measures set out in this Directive, emissions from shipping would soon have been higher than emissions from all land-based sources.

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<sup>1</sup> OJ L 242, 10.9.2002, p. 1.

<sup>2</sup> OJ L 121, 11.5.1999, p. 13.

- (5) Air pollution caused by ships at berth is a major concern for many harbour cities when it comes to their efforts to meet the Union's air quality limit values.
- (6) Member States should encourage the use of shore-side electricity, as the electricity for present-day ships is usually provided by auxiliary engines.
- (7) Under Directive 1999/32/EC, the Commission is to report to the European Parliament and the Council on the implementation of that Directive and may submit with its report proposals for amending it, in particular as regards the reduction of sulphur limits for marine fuel in SO<sub>x</sub> Emission Control Areas (SECAs), in accordance with the work of the International Maritime Organisation (IMO).
- (8) In 2008, the IMO adopted a resolution to amend Annex VI of the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL), containing regulations for the prevention of air pollution from ships. The revised Annex VI to MARPOL entered into force on 1 July 2010.

- (9) The revised Annex VI to MARPOL introduces, inter alia, stricter sulphur limits for marine fuel in SECAs (1,00 % as of 1 July 2010 and 0,10 % as of 1 January 2015) as well as in sea areas outside SECAs (3,50 % as of 1 January 2012 and, in principle, 0,50 % as of 1 January 2020). Most Member States are obliged, in accordance with their international commitments, to require ships to use fuel with a maximum sulphur content of 1,00 % in SECAs as of 1 July 2010. In order to ensure coherence with international law as well as to secure proper enforcement of new globally established sulphur standards in the Union, Directive 1999/32/EC should be aligned with the revised Annex VI to MARPOL. In order to ensure a minimum quality of fuel used by ships either for fuel-based or technology-based compliance, marine fuel the sulphur content of which exceeds the general standard of 3,50 % by mass should not be allowed for use in the Union, except for fuels supplied to ships using emission abatement methods operating in closed mode.
- (10) Amendments to Annex VI to MARPOL regarding SECAs are possible under IMO procedures. In the event that further changes, including exemptions, are introduced with regard to the application of SECA limits in Annex VI to MARPOL, the Commission should consider any such changes and, where appropriate, without delay make the necessary proposal in accordance with the TFEU to fully align Directive 1999/32/EC with the IMO rules regarding SECAs.
- (11) The introduction of any new emission control areas should be subject to the IMO process under Annex VI to MARPOL and should be underpinned by a well-founded case based on environmental and economic grounds and supported by scientific data.

- (12) In accordance with regulation 18 of the revised Annex VI to MARPOL, Member States should endeavour to ensure the availability of marine fuels which comply with this Directive.
- (13) In view of the global dimension of environmental politics and shipping emissions, ambitious emission standards should be set at a global level.
- (14) Passenger ships operate mostly in ports or close to coastal areas and their impacts on human health and the environment are significant. In order to improve air quality around ports and coasts, those ships are required to use marine fuel with a maximum sulphur content of 1,50 % until stricter sulphur standards apply to all ships in territorial seas, exclusive economic zones and pollution control zones of Member States.
- (15) In accordance with Article 193 TFEU, this Directive should not prevent any Member State from maintaining or introducing more stringent protective measures in order to encourage early implementation with respect to the maximum sulphur content of marine fuels, for instance using emission abatement methods outside SECAs.
- (16) In order to facilitate the transition to new engine technologies with the potential for significant further emission reductions in the maritime sector, the Commission should further explore opportunities to enable and encourage the uptake of gas-powered engines in ships.

- (17) Proper enforcement of the obligations with regard to the sulphur content of marine fuels is necessary in order to achieve the aims of Directive 1999/32/EC. The experience from the implementation of Directive 1999/32/EC has shown that there is a need for a stronger monitoring and enforcement regime in order to ensure the proper implementation of that Directive. To that end, it is necessary that Member States ensure sufficiently frequent and accurate sampling of marine fuel placed on the market or used on board ship as well as regular verification of ships' log books and bunker delivery notes. It is also necessary for Member States to establish a system of effective, proportionate and dissuasive penalties for non-compliance with the provisions of Directive 1999/32/EC. In order to ensure more transparency of information, it is also appropriate to provide that the register of local suppliers of marine fuel be made publicly available.
- (18) Reporting by Member States under Directive 1999/32/EC has proved insufficient for the purpose of verification of compliance with that Directive due to the lack of harmonised and sufficiently precise provisions on the content and the format of the Member States' reports. Therefore, more detailed indications as regards the content and the format of the report are necessary to ensure more harmonised reporting.
- (19) Following the adoption of Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control)<sup>1</sup>, which recasts the Union legislation on industrial emissions, it is necessary to amend the provisions of Directive 1999/32/EC relating to maximum sulphur content of heavy fuel oil accordingly.

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<sup>1</sup> OJ L 334, 17.12.2010, p. 17.

- (20) Complying with the low sulphur limits for marine fuels, particularly in SECAs, can result in a significant increase in the price of such fuels, at least in the short term, and can have a negative effect on the competitiveness of short sea shipping in comparison with other transport modes, as well as on the competitiveness of the industries in the countries bordering SECAs. Suitable solutions are necessary in order to reduce compliance costs for the affected industries, such as allowing for alternative, more cost-effective methods of compliance than fuel-based compliance and providing support, where necessary. The Commission will, based inter alia on reports from Member States, closely monitor the impacts of the shipping sector's compliance with the new fuel quality standards, particularly with respect to possible modal shift from sea to land-based transport and will, if appropriate, propose proper measures to counteract such a trend.
- (21) Limiting modal shift from sea to land-based transport is important given that an increasing share of goods being transported by road would in many cases run counter to the Union's climate change objectives and increase congestion.
- (22) The costs of the new requirements to reduce sulphur dioxide emissions could result in modal shift from sea to land-based transport and could have negative effects on the competitiveness of the industries. The Commission should make full use of instruments such as Marco Polo and the trans-European transport network to provide targeted assistance so as to minimise the risk of modal shift. Member States may consider it necessary to provide support to operators affected by this Directive in accordance with the applicable State aid rules.



- (23) In accordance with existing guidelines on State aid for environmental protection, and without prejudice to future changes thereto, Member States may provide State aid in favour of operators affected by this Directive, including aid for retrofitting operations of existing vessels, if such aid measures are deemed to be compatible with the internal market in accordance with Articles 107 and 108 TFEU, in particular in light of the applicable guidelines on State aid for environmental protection. In this context, the Commission may take into account that the use of some emission abatement methods go beyond the requirements of this Directive by reducing not only the sulphur dioxide emissions but also other emissions.
- (24) Access to emission abatement methods should be facilitated. Those methods can provide emission reductions at least equivalent to, or even greater than, those achievable using low sulphur fuel, provided that they have no significant negative impacts on the environment, such as marine ecosystems, and that they are developed subject to appropriate approval and control mechanisms. The already known alternative methods, such as the use of on-board exhaust gas cleaning systems, the mixture of fuel and liquefied natural gas (LNG) or the use of biofuels should be recognised in the Union. It is important to promote the testing and development of new emission abatement methods in order, among other reasons, to limit modal shift from sea to land-based transport.
- (25) Emission abatement methods hold the potential for significant emission reductions. The Commission should therefore promote the testing and development of these technologies, inter alia by considering the establishment of a co-financed joint programme with industry, based on principles from similar programmes, such as the Clean Sky Programme.

- (26) The Commission, in cooperation with Member States and stakeholders, should further develop measures identified in the Commission's staff working paper of 16 September 2011 entitled 'Pollutant emission reduction from maritime transport and the sustainable waterborne transport toolbox'.
- (27) Alternative emission abatement methods such as some types of scrubbers could generate waste that should be handled properly and not be discharged into the sea. Pending the revision of Directive 2000/59/EC of the European Parliament and of the Council of 27 November 2000 on port reception facilities for ship-generated waste and cargo residues<sup>1</sup>, Member States should ensure, in accordance with their international commitments, the availability of port reception facilities adequate to meet the needs of ships using exhaust gas cleaning systems. In the revision of Directive 2000/59/EC, the Commission should consider the inclusion of waste from exhaust gas cleaning systems under the principle of no special fee applying to port fees for ship-generated waste provided for in that Directive.
- (28) The Commission should, as part of its air quality policy review in 2013, consider the possibility of reducing air pollution, including in the territorial seas of Member States.

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<sup>1</sup> OJ L 332, 28.12.2000, p. 81.

- (29) Effective, proportionate and dissuasive penalties are important for the implementation of Directive 1999/32/EC. Member States should include in those penalties fines calculated in such a way as to ensure that the fines at least deprive those responsible of the economic benefits derived from their infringement and that those fines gradually increase for repeated infringements. Member States should notify the provisions on penalties to the Commission.
- (30) The power to adopt acts in accordance with Article 290 TFEU should be delegated to the Commission in respect of the amendment of the equivalent emission values for and the criteria for the use of emission abatement methods in order to adapt the provisions of Directive 1999/32/EC to scientific and technical progress and in such a way as to ensure strict consistency with the relevant instruments of the IMO and in respect of the amendment of points 1, 2, 3, 3a, 3b and 4 of Article 2, point (b) of Article 6(1a) and Article 6(2) of Directive 1999/32/EC in order to adapt the provisions of that Directive to scientific and technical progress. It is of particular importance that the Commission carry out appropriate consultations during its preparatory work, including at expert level. The Commission, when preparing and drawing up delegated acts, should ensure a simultaneous, timely and appropriate transmission of relevant documents to the European Parliament and to the Council.

- (31) In order to ensure uniform conditions for the implementation of Directive 1999/32/EC, implementing powers should be conferred on the Commission. Those powers should be exercised in accordance with Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by Member States of the Commission's exercise of implementing powers<sup>1</sup>.
- (32) It is appropriate for the Committee on Safe Seas and the Prevention of Pollution from Ships established by Regulation (EC) No 2099/2002 of the European Parliament and of the Council of 5 November 2002 establishing a Committee on Safe Seas and the Prevention of Pollution from Ships (COSS)<sup>2</sup> to assist the Commission in the approval of the emission abatement methods which are not covered by Council Directive 96/98/EC of 20 December 1996 on marine equipment<sup>3</sup>.

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<sup>1</sup> OJ L 55, 28.2.2011, p. 13.

<sup>2</sup> OJ L 324, 29.11.2002, p. 1.

<sup>3</sup> OJ L 46, 17.2.1997, p. 25.

- (33) In accordance with the Joint Political Declaration of 28 September 2011 of Member States and the Commission on explanatory documents<sup>1</sup>, Member States have undertaken to accompany, in justified cases, the notification of their transposition measures with one or more documents explaining the relationship between the components of a directive and the corresponding parts of national transposition instruments. With regard to this Directive, the legislator considers the transmission of such documents to be justified.
- (34) Directive 1999/32/EC should therefore be amended accordingly,

HAVE ADOPTED THIS DIRECTIVE:

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<sup>1</sup> OJ C 369, 17.12.2011, p. 14.

*Article 1*  
*Amendments to Directive 1999/32/EC*

Directive 1999/32/EC is amended as follows:

- (1) in Article 1(2), point (h) is replaced by the following:
  - '(h) without prejudice to Article 3a, fuels used on board vessels employing emission abatement methods in accordance with Articles 4c and 4e.';
- (2) Article 2 is amended as follows:
  - (a) points 1 and 2 are replaced by the following:
    - '(1) heavy fuel oil means:
      - any petroleum-derived liquid fuel, excluding marine fuel, falling within CN code 2710 19 51 to 2710 19 68, 2710 20 31, 2710 20 35, 2710 20 39,  
or

- any petroleum-derived liquid fuel, other than gas oil as defined in points 2 and 3, which, by reason of its distillation limits, falls within the category of heavy oils intended for use as fuel and of which less than 65 % by volume (including losses) distils at 250 °C by the ASTM D86 method. If the distillation cannot be determined by the ASTM D86 method, the petroleum product is likewise categorised as a heavy fuel oil;

(2) gas oil means:

- any petroleum-derived liquid fuel, excluding marine fuel, falling within CN code 2710 19 25, 2710 19 29, 2710 19 47, 2710 19 48, 2710 20 17 or 2710 20 19, or
- any petroleum-derived liquid fuel, excluding marine fuel, of which less than 65 % by volume (including losses) distils at 250 °C and of which at least 85 % by volume (including losses) distils at 350 °C by the ASTM D86 method.

Diesel fuels as defined in point 2 of Article 2 of Directive 98/70/EC of the European Parliament and of the Council of 13 October 1998 relating to the quality of petrol and diesel fuels\* are excluded from this definition. Fuels used in non-road mobile machinery and agricultural tractors are also excluded from this definition;

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\* OJ L 350, 28.12.1998, p. 58.;

(b) points 3a and 3b are replaced by the following:

'(3a) marine diesel oil means any marine fuel as defined for DMB grade in Table I of ISO 8217 with the exception of the reference to the sulphur content;

(3b) marine gas oil means any marine fuel as defined for DMX, DMA and DMZ grades in Table I of ISO 8217 with the exception of the reference to the sulphur content;';

(c) point 3m is replaced by the following:

'(3m) emission abatement method means any fitting, material, appliance or apparatus to be fitted in a ship or other procedure, alternative fuel, or compliance method, used as an alternative to low sulphur marine fuel meeting the requirements set out in this Directive, that is verifiable, quantifiable and enforceable;';

(3) Article 3 is amended as follows:

(a) paragraphs 1 and 2 are replaced by the following:

'1. Member States shall ensure that heavy fuel oils are not used within their territory if their sulphur content exceeds 1 % by mass.



2. Until 31 December 2015, subject to appropriate monitoring of emissions by competent authorities, paragraph 1 shall not apply to heavy fuel oils used:
  - (a) in combustion plants which fall within the scope of Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants\*, which are subject to Article 4(1) or (2) or Article 4(3)(a) of that Directive and which comply with the emission limits for sulphur dioxide for such plants as set out in that Directive;
  - (b) in combustion plants which fall within the scope of Directive 2001/80/EC, which are subject to Article 4(3)(b) and Article 4(6) of that Directive and the monthly average sulphur dioxide emissions of which do not exceed 1 700 mg/Nm<sup>3</sup> at an oxygen content in the flue gas of 3 % by volume on a dry basis;
  - (c) in combustion plants which do not fall under points (a) or (b), and the monthly average sulphur dioxide emissions of which do not exceed 1 700 mg/Nm<sup>3</sup> at an oxygen content in the flue gas of 3 % by volume on a dry basis;

- (d) for combustion in refineries, where the monthly average of emissions of sulphur dioxide averaged over all combustion plants in the refinery, irrespective of the type of fuel or fuel combination used, but excluding plants which fall under points (a) and (b), gas turbines and gas engines, do not exceed  $1\,700\text{ mg/Nm}^3$  at an oxygen content in the flue gas of 3 % by volume on a dry basis.
3. As from 1 January 2016, subject to appropriate monitoring of emissions by competent authorities, paragraph 1 shall not apply to heavy fuel oils used:
- (a) in combustion plants which fall within the scope of Chapter III of Directive 2010/75/EU of the European Parliament and of the Council<sup>\*\*</sup>, and which comply with the emission limits for sulphur dioxide for such plants as set out in Annex V to that Directive or, where those emission limit values are not applicable according to that Directive, for which the monthly average sulphur dioxide emissions do not exceed  $1\,700\text{ mg/Nm}^3$  at an oxygen content in the flue gas of 3 % by volume on a dry basis;
  - (b) in combustion plants which do not fall under point (a), and the monthly average sulphur dioxide emissions of which do not exceed  $1\,700\text{ mg/Nm}^3$  at an oxygen content in the flue gas of 3 % by volume on a dry basis;

- (c) for combustion in refineries, where the monthly average of emissions of sulphur dioxide averaged over all combustion plants in the refinery, irrespective of the type of fuel or fuel combination used, but excluding plants falling under point (a), gas turbines and gas engines, do not exceed 1 700 mg/Nm<sup>3</sup> at an oxygen content in the flue gas of 3 % by volume on a dry basis.

Member States shall take the necessary measures to ensure that no combustion plant using heavy fuel oil with a sulphur concentration greater than that referred to in paragraph 1 is operated without a permit issued by a competent authority, which specifies the emission limits.

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\* OJ L 309, 27.11.2001, p. 1.

\*\* OJ L 334, 17.12.2010, p. 17.;

- (b) paragraph 3 is deleted;

(4) the following Article is inserted:

*'Article 3a*

*Maximum sulphur content in marine fuel*

Member States shall ensure that marine fuels are not used within their territory if their sulphur content exceeds 3,50 % by mass, except for fuels supplied to ships using emission abatement methods subject to Article 4c operating in closed mode.';

(5) in Article 4, paragraph 1 is replaced by the following:

'1. Member States shall ensure that gas oils are not used within their territory if their sulphur content exceeds 0,10 % by mass.';

(6) Article 4a is amended as follows:

(a) the title is replaced by the following:

'Maximum sulphur content of marine fuels used in territorial seas, exclusive economic zones and pollution control zones of Member States, including SOx Emission Control Areas and by passenger ships operating on regular services to or from Union ports';

(b) paragraph 1 is replaced by the following:

'1. Member States shall take all necessary measures to ensure that marine fuels are not used in the areas of their territorial seas, exclusive economic zones and pollution control zones falling within SO<sub>x</sub> Emission Control Areas if the sulphur content of those fuels by mass exceeds:

(a) 1,00 % until 31 December 2014;

(b) 0,10 % as from 1 January 2015.

This paragraph shall apply to all vessels of all flags, including vessels whose journey began outside the Union. The Commission shall have due regard to any future changes to the requirements pursuant to Annex VI to MARPOL applicable within SO<sub>x</sub> Emission Control Areas, and, where appropriate, without undue delay make any relevant proposals with a view to amending this Directive accordingly.';

(c) the following paragraph is inserted:

'1a. Member States shall take all necessary measures to ensure that marine fuels are not used in the areas of their territorial seas, exclusive economic zones and pollution control zones if the sulphur content of those fuels by mass exceeds:

(a) 3,50 % as from ...<sup>+</sup>;

(b) 0,50 % as from 1 January 2020.

This paragraph shall apply to all vessels of all flags, including vessels whose journey began outside of the Union, without prejudice to paragraphs 1 and 4 of this Article and Article 4b.');

(d) paragraphs 4, 5, 6 and 7 are replaced by the following:

'4. Member States shall take all necessary measures to ensure that marine fuels are not used in their territorial seas, exclusive economic zones and pollution control zones falling outside SO<sub>x</sub> Emission Control Areas by passenger ships operating on regular services to or from any Union port if the sulphur content of those fuels exceeds 1,50 % by mass until 1 January 2020.

Member States shall be responsible for the enforcement of this requirement at least in respect of vessels flying their flag and vessels of all flags while in their ports.

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<sup>+</sup> OJ: Please insert the date: 18 months after the entry into force of this Directive.

5. Member States shall require the correct completion of ships' logbooks, including fuel-changeover operations.
- 5a. Member States shall endeavour to ensure the availability of marine fuels which comply with this Directive and inform the Commission of the availability of such marine fuels in its ports and terminals.
- 5b. If a ship is found by a Member State not to be in compliance with the standards for marine fuels which comply with this Directive, the competent authority of the Member State is entitled to require the ship to:
  - (a) present a record of the actions taken to attempt to achieve compliance; and
  - (b) provide evidence that it attempted to purchase marine fuel which complies with this Directive in accordance with its voyage plan and, if it was not made available where planned, that attempts were made to locate alternative sources for such marine fuel and that, despite best efforts to obtain marine fuel which complies with this Directive, no such marine fuel was made available for purchase.

The ship shall not be required to deviate from its intended voyage or to delay unduly the voyage in order to achieve compliance.

If a ship provides the information referred to in the first subparagraph, the Member State concerned shall take into account all relevant circumstances and the evidence presented to determine the appropriate action to take, including not taking control measures.

A ship shall notify its flag State, and the competent authority of the relevant port of destination, when it cannot purchase marine fuel which complies with this Directive.

A port State shall notify the Commission when a ship has presented evidence of the non-availability of marine fuels which comply with this Directive.

6. Member States shall, in accordance with regulation 18 of Annex VI to MARPOL:
  - (a) maintain a publicly available register of local suppliers of marine fuel;
  - (b) ensure that the sulphur content of all marine fuels sold in their territory is documented by the supplier on a bunker delivery note, accompanied by a sealed sample signed by the representative of the receiving ship;
  - (c) take action against marine fuel suppliers that have been found to deliver fuel that does not comply with the specification stated on the bunker delivery note;



(d) ensure that remedial action is taken to bring any non-compliant marine fuel discovered into compliance.

7. Member States shall ensure that marine diesel oils are not placed on the market in their territory if the sulphur content of those marine diesel oils exceeds 1,50 % by mass.;

(e) paragraph 8 is deleted;

(7) Articles 4b and 4c are replaced by the following:

*'Article 4b*

*Maximum sulphur content of marine fuels used by ships at berth in Union ports*

1. Member States shall take all necessary measures to ensure that ships at berth in Union ports do not use marine fuels with a sulphur content exceeding 0,10 % by mass, allowing sufficient time for the crew to complete any necessary fuel-changeover operation as soon as possible after arrival at berth and as late as possible before departure.

Member States shall require the time of any fuel-changeover operation to be recorded in ships' logbooks.

2. Paragraph 1 shall not apply:
  - (a) whenever, according to published timetables, ships are due to be at berth for less than two hours;
  - (b) to ships which switch off all engines and use shore-side electricity while at berth in ports.
3. Member States shall ensure that marine gas oils are not placed on the market in their territory if the sulphur content of those marine gas oils exceeds 0,10 % by mass.

*Article 4c*

*Emission abatement methods*

1. Member States shall allow the use of emission abatement methods by ships of all flags in their ports, territorial seas, exclusive economic zones and pollution control zones, as an alternative to using marine fuels that meet the requirements of Articles 4a and 4b, subject to paragraphs 2 and 3 of this Article.
2. Ships using the emission abatement methods referred to in paragraph 1 shall continuously achieve reductions of sulphur dioxide emissions that are at least equivalent to the reductions that would be achieved by using marine fuels that meet the requirements of Articles 4a and 4b. Equivalent emission values shall be determined in accordance with Annex I.

- 2a. Member States shall, as an alternative solution for reducing emissions, encourage the use of onshore power supply systems by docked vessels.
3. The emission abatement methods referred to in paragraph 1 shall comply with the criteria specified in the instruments referred to in Annex II.
4. Where justified in the light of scientific and technical progress regarding alternative emission abatement methods and in such a way as to ensure strict consistency with the relevant instruments and standards adopted by the IMO, the Commission shall:
  - (a) be empowered to adopt delegated acts in accordance with Article 9a amending Annexes I and II;
  - (b) adopt implementing acts laying down the detailed requirements for monitoring of emissions, where appropriate. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 9(2).';

(8) the following Articles are inserted:

*'Article 4d*

*Approval of emission abatement methods for use on board ships flying the flag of a Member State*

1. Emission abatement methods falling within the scope of Council Directive 96/98/EC\* shall be approved in accordance with that Directive.

2. Emission abatement methods not covered by paragraph 1 of this Article shall be approved in accordance with the procedure referred to in Article 3(2) of Regulation (EC) No 2099/2002 of the European Parliament and of the Council of 5 November 2002 establishing a Committee on Safe Seas and the Prevention of Pollution from Ships (COSS)\*\*, taking into account:
  - (a) guidelines developed by the IMO;
  - (b) the results of any trials conducted under Article 4e;
  - (c) effects on the environment, including achievable emission reductions, and impacts on ecosystems in enclosed ports, harbours and estuaries; and
  - (d) the feasibility of monitoring and verification.

*Article 4e*

*Trials of new emission abatement methods*

Member States may, in cooperation with other Member States, as appropriate, approve trials of ship emission abatement methods on vessels flying their flag, or in sea areas within their jurisdiction. During those trials, the use of marine fuels meeting the requirements of Articles 4a and 4b shall not be mandatory, provided that all of the following conditions are fulfilled:

- (a) the Commission and any port State concerned are notified in writing at least six months before trials begin;

- (b) permits for trials do not exceed 18 months in duration;
- (c) all ships involved install tamper-proof equipment for the continuous monitoring of funnel gas emissions and use it throughout the trial period;
- (d) all ships involved achieve emission reductions which are at least equivalent to those which would be achieved through the sulphur limits for fuels specified in this Directive;
- (e) there are proper waste management systems in place for any waste generated by the emission abatement methods throughout the trial period;
- (f) there is an assessment of impacts on the marine environment, particularly ecosystems in enclosed ports, harbours and estuaries throughout the trial period; and
- (g) full results are provided to the Commission, and made publicly available, within six months of the end of the trials.

*Article 4f*

*Financial measures*

Member States may adopt financial measures in favour of operators affected by this Directive where such financial measures are in accordance with State aid rules applicable and to be adopted in this area.

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\* OJ L 46, 17.2.1997, p. 25.

\*\* OJ L 324, 29.11.2002, p. 1.;

(9) Article 6 is replaced by the following:

*'Article 6*

*Sampling and analysis*

1. Member States shall take all necessary measures to check by sampling that the sulphur content of fuels used complies with Articles 3, 3a, 4, 4a and 4b. The sampling shall commence on the date on which the relevant limit for maximum sulphur content in the fuel comes into force. It shall be carried out periodically with sufficient frequency and quantities in such a way that the samples are representative of the fuel examined, and in the case of marine fuel, of the fuel being used by vessels while in relevant sea areas and ports. The samples shall be analysed without undue delay.

1a. The following means of sampling, analysis and inspection of marine fuel shall be used:

(a) inspection of ships' log books and bunker delivery notes;

and, as appropriate, the following means of sampling and analysis:

(b) sampling of the marine fuel for on-board combustion while being delivered to ships, in accordance with the Guidelines for the sampling of fuel oil for determination of compliance with the revised MARPOL Annex VI adopted on 17 July 2009 by Resolution 182(59) of the Marine Environment Protection Committee (MEPC) of the IMO, and analysis of its sulphur content; or

(c) sampling and analysis of the sulphur content of marine fuel for on-board combustion contained in tanks, where technically and economically feasible, and in sealed bunker samples on board ships.

1b. The Commission shall be empowered to adopt implementing acts concerning:

(a) the frequency of sampling;

(b) the sampling methods;

(c) the definition of a sample representative of the fuel examined.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 9(2).

2. The reference method adopted for determining the sulphur content shall be ISO method 8754 (2003) or PrEN ISO 14596 (2007).

In order to determine whether marine fuel delivered to and used on board ships is compliant with the sulphur limits required by Articles 3a, 4, 4a and 4b the fuel verification procedure set out in Appendix VI to Annex VI to MARPOL shall be used.';

(10) Article 7 is amended as follows:

(a) paragraph 1 is replaced by the following:

- '1. Each year by 30 June, Member States shall, on the basis of the results of the sampling, analysis and inspections carried out in accordance with Article 6, submit a report to the Commission on the compliance with the sulphur standards set out in this Directive for the preceding year.

On the basis of the reports received in accordance with the first subparagraph of this paragraph and the notifications regarding the non-availability of marine fuel which complies with this Directive submitted by Member States in accordance with the fifth subparagraph of Article 4a(5b), the Commission shall, within 12 months from the date referred to in the first subparagraph of this paragraph, draw up and publish a report on the implementation of this Directive. The Commission shall evaluate the need for further strengthening the relevant provisions of this Directive and make any appropriate legislative proposals to that effect.';



(b) the following paragraph is inserted:

'1a. The Commission may adopt implementing acts concerning the information to be included in the report and the format of the report. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 9(2).';

(c) paragraphs 2 and 3 are replaced by the following:

- '2. By 31 December 2013 the Commission shall submit a report to the European Parliament and to the Council which shall be accompanied, if appropriate, by legislative proposals. The Commission shall consider in its report the potential for reducing air pollution taking into account, inter alia: annual reports submitted in accordance with paragraphs 1 and 1a; observed air quality and acidification; fuel costs; potential economic impact and observed modal shift; and progress in reducing emissions from ships.
3. The Commission shall, in cooperation with Member States and stakeholders, by 31 December 2012, develop appropriate measures, including those identified in the Commission's staff working paper of 16 September 2011 entitled "Pollutant emission reduction from maritime transport and the sustainable waterborne transport toolbox" promoting compliance with the environmental standards of this Directive, and minimising the possible negative impacts.';

(d) paragraph 4 is replaced by the following:

'4. The Commission shall be empowered to adopt delegated acts in accordance with Article 9a concerning the adaptations of Article 2, points 1, 2, 3, 3a, 3b and 4, point (b) of Article 6(1a) and Article 6(2) to scientific and technical progress. Such adaptations shall not result in any direct changes to the scope of this Directive or to sulphur limits for fuels specified in this Directive.';

(11) Article 8 is deleted;

(12) Article 9 is replaced by the following:

*'Article 9*

*Committee procedure*

1. The Commission shall be assisted by a committee. That committee shall be a committee within the meaning of Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by Member States of the Commission's exercise of implementing powers\* .

2. Where reference is made to this paragraph, Article 5 of Regulation (EU) No 182/2011 shall apply.

Where the committee delivers no opinion, the Commission shall not adopt the draft implementing act and the third subparagraph of Article 5(4) of Regulation (EU) No 182/2011 shall apply.

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\* OJ L 55, 28.2.2011, p. 13.;

- (13) the following Article is inserted:

*'Article 9a*

*Exercise of the delegation*

1. The power to adopt delegated acts is conferred on the Commission subject to the conditions laid down in this Article.
2. The power to adopt delegated acts referred to in Article 4c(4) and Article 7(4) shall be conferred on the Commission for a period of five years from ...<sup>+</sup>. The Commission shall draw up a report in respect of the delegation of power not later than nine months before the end of the five-year period. The delegation of power shall be tacitly extended for periods of an identical duration, unless the European Parliament or the Council opposes such extension not later than three months before the end of each period.

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<sup>+</sup> OJ: Please insert the date of entry into force of this Directive.

3. The delegation of power referred to in Article 4c(4) and Article 7(4) may be revoked at any time by the European Parliament or by the Council. A decision to revoke shall put an end to the delegation of the powers specified in that decision. It shall take effect the day following the publication of the decision in the *Official Journal of the European Union* or at a later date specified therein. It shall not affect the validity of any delegated acts already in force.
4. As soon as it adopts a delegated act, the Commission shall notify it simultaneously to the European Parliament and to the Council.
5. A delegated act adopted pursuant to Article 4c(4) and Article 7(4) shall enter into force only if no objection has been expressed either by the European Parliament or the Council within a period of three months of notification of that act to the European Parliament and the Council or if, before the expiry of that period, the European Parliament and the Council have both informed the Commission that they will not object. That period shall be extended by three months at the initiative of the European Parliament or of the Council.';

(14) Article 11 is replaced by the following:

*'Article 11*

*Penalties*

1. Member States shall determine the penalties applicable to breaches of the national provisions adopted pursuant to this Directive.
2. The penalties determined must be effective, proportionate and dissuasive and may include fines calculated in such a way as to ensure that the fines at least deprive those responsible of the economic benefits derived from their infringement and that those fines gradually increase for repeated infringements.');

(15) the Annex to Directive 1999/32/EC is replaced by the Annex to this Directive.

*Article 2*

*Transposition*

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by ...\*. They shall forthwith communicate to the Commission the text of those provisions.

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. The methods of making such reference shall be laid down by Member States.

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\* OJ: Please insert the date: 18 months after the entry into force of this Directive.

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 3*

*Entry into force*

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

*Article 4*

*Addressees*

This Directive is addressed to the Member States.

Done at Strasbourg,

*For the European Parliament*

*The President*

*For the Council*

*The President*

## ANNEX

### *'ANNEX I*

Equivalent emission values for emission abatement methods as referred to in Article 4c(2)

Marine fuel sulphur limits referred to in Articles 4a and 4b and regulations 14.1 and 14.4 of Annex VI to MARPOL and corresponding emission values referred to in Article 4c(2):

Marine fuel Sulphur Content (% m/m)	Ratio Emission SO <sub>2</sub> (ppm)/CO <sub>2</sub> (% v/v)
3,50	151,7
1,50	65,0
1,00	43,3
0,50	21,7
0,10	4,3

Note:

- The use of the Ratio Emissions limits is only applicable when using petroleum based Distillate or Residual Fuel Oils.
- In justified cases where the CO<sub>2</sub> concentration is reduced by the exhaust gas cleaning (EGC) unit, the CO<sub>2</sub> concentration may be measured at the EGC unit inlet, provided that the correctness of such a methodology can be clearly demonstrated.

## ANNEX II

### Criteria for the use of emission abatement methods referred to in Article 4c(3)

The emission abatement methods referred to in Article 4c shall comply at least with the criteria specified in the following instruments, as applicable:

Emission abatement method	Criteria for use
Mixture of marine fuel and boil-off gas	Commission Decision 2010/769/EU of 13 December 2010 on the establishment of criteria for the use by liquefied natural gas carriers of technological methods as an alternative to using low sulphur marine fuels meeting the requirements of Article 4b of Council Directive 1999/32/EC relating to a reduction in the sulphur content of certain liquid fuels as amended by Directive 2005/33/EC of the European Parliament and of the Council on the sulphur content of marine fuels <sup>1</sup> .
Exhaust gas cleaning systems	Resolution MEPC.184(59) adopted on 17 July 2009 "Wash water resulting from exhaust gas cleaning systems which make use of chemicals, additives, preparations and relevant chemical created in situ", referred to in point 10.1.6.1 of Resolution MEPC.184(59), shall not be discharged into the sea, including enclosed ports, harbours and estuaries, unless it is demonstrated by the ship operator that such wash water discharge has no significant negative impacts on and do not pose risks to human health and the environment. If the chemical used is caustic soda it is sufficient that the washwater meets the criteria set out in Resolution MEPC.184(59) and its pH does not exceed 8,0.



Emission abatement method	Criteria for use
Biofuels	<p>Use of biofuels as defined in Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources<sup>2</sup> that comply with the relevant CEN and ISO standards.</p> <p>The mixtures of biofuels and marine fuels shall comply with the sulphur standards set out in Article 3a, Article 4a(1), (1a) and (4) and Article 4b of this Directive.</p>
<p><sup>1</sup> OJ L 328, 14.12.2010, p. 15.</p> <p><sup>2</sup> OJ L 140, 5.6.2009, p. 16.'</p>	

