

Order on the sulphur content of solid and liquid fuels¹

In pursuance of section 7(1)(iv), section 44 (1), section 51(1)(vi), section 67, section 73, section 80 and section 110(3) and (4) of the environmental protection act (*lov om miljøbeskyttelse*), cf. consolidated act no. 879 of 26 June 2010, section 24, section 32, section 43(2), section 45, section 48, section 61 and section 62 of the act on protection of the marine environment (*lov om beskyttelse af havmiljøet*), cf. consolidated act no. 929 of 24 September 2009 as well as section 30(1), section 45(1), section 59(4) and section 60 of the act on chemical substances and products, cf. consolidated act no. 878 of 26 June 2010, following negotiations with the Ministry of Transport and Energy, and with due consideration of annex 13 (revised annex VI) of the 73/78 MARPOL Convention, the following provisions are laid down:

Chapter 1

Purpose, definitions and scope

Section 1. This order lays down limits for the sulphur content in certain solid and liquid fuels, including fuels used on board ships and on offshore platforms, as well as regulations for the use of said fuels, and for marketing marine fuels.

Subsection 2. Except for the exceptions mentioned in section 3, this order shall cover coal, petcoke and other solid fossil fuels, as well as the types of oil defined in section 2.

Section 2. For the purpose of this order:

- 1) fuel oil shall mean:
 - a) mineral oil based liquid fuels, excluding marine fuels, falling within CN code 2710 19 51 to 2710 19 69,
 - b) mineral oil based liquid fuels, other than gas oil and marine gas oil, which, by reason of their distillation limits, fall 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,
 - c) mineral oil based liquid fuels for which the distillation, cf. point b and no. 3, point b, cannot be determined by the ASTM D86 method;
- 2) gas oil shall mean:
 - a) mineral oil based liquid fuels, excluding marine fuels, falling within CN code 2710 19 25, 2710 19 29, 2710 19 45 or 2710 19 49,
 - b) mineral oil based liquid fuels, excluding marine fuels, 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;

¹ This order contains provisions implementing Council Directive 1999/32/EC of 26 April 1999 relating to a reduction in the sulphur content of certain liquid fuels and amending Directive 93/12/EEC, Official Journal 1999 no. L 121, p. 13, Directive 2005/33/EC of the European Parliament and of the Council of 6 July 2005 amending Directive 1999/32/EC on limiting the sulphur content of ships' fuels, Official Journal 2005 no. L 191, p. 59. Order no. 532 of 25 May 2001 on limiting the sulphur content, etc. of fuels used on board ships and on offshore platforms has been notified in draft in accordance with Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 (the information procedure directive), as amended most recently by Directive 98/48/EC of 20 July 1998. The provisions of the orders are continued in this order.

- 3) marine fuel shall mean mineral oil based liquid fuels intended for use or in use on board ships or on offshore platforms, including those fuels defined in ISO 8217, version 2010;
- 4) marine diesel oil shall mean marine fuel which has a viscosity or density falling within the ranges of viscosity or density defined for DMB and DMC 10 grades in table 2 of ISO 8217, version 2010;
- 5) marine gas oil shall mean marine fuel which has a viscosity or density falling within the ranges of viscosity or density defined for DMX and DMA grades in table 1 of ISO 8217, version 2010;
- 6) annex 13 of the MARPOL Convention (revised annex VI) shall mean the annex with regulations for the prevention of air pollution from ships in the 1997 Protocol to the International Convention on the Prevention of Pollution from Ships, 1973, as amended by the related Protocol of 1978 (the MARPOL Convention);
- 7) passenger ship shall mean a ship that carries more than 12 passengers, where a passenger is every person other than:
 - a) the master and the members of the crew or other persons employed or engaged in any capacity on board a ship on the business of that ship, and
 - b) a child below the age of one;
- 8) regular services shall mean ship crossings between the same two or more ports, or a series of voyages from and to the same port without intermediate calls:
 - a) according to a published timetable, or
 - b) with crossings so regular or frequent that they constitute a recognisable schedule;
- 9) ship at berth shall mean a ship which is securely moored or anchored in a port while loading, unloading or hotelling, including the time spent when not engaged in cargo operations;
- 10) inland waterway vessel shall mean a vessel particularly intended for use on an inland waterway as defined in Council Directive 82/714/EEC of 4 October 1982 laying down technical requirements for inland waterway vessels, including all vessels which carry:
 - a) a Community inland navigation certificate, as defined in Directive 82/714/EEC, or
 - b) a certificate issued pursuant to article 22 of the revised Convention for the Navigation of the Rhine;
- 11) placing on the market shall mean supplying or making available to third persons, against payment or free of charge, marine fuels for on board combustion, except for supplying or making available marine fuels for export in ships' cargo tanks;
- 12) emission abatement technology shall mean an exhaust gas cleaning system, or any other technological method intended to reduce emissions of sulphur and that is verifiable and enforceable;
- 13) ASTM method shall mean the methods laid down by the American Society for Testing and Materials in the 1976 edition of standard definitions and specifications for mineral oil products and lubricating products;
- 14) combustion plant shall mean any technical apparatus in which fuels are combusted in order to use the heat generated;
- 15) % by mass: per cent by mass;
- 16) % by volume: per cent by volume.

Section 3. This order shall not apply to:

- 1) fuels intended for processing prior to final combustion,
- 2) fuels to be processed in the refining industry,
- 3) fuels used in research and testing,

- 4) fuels used by warships and other vessels on military service,
- 5) fuels used for the purpose of securing the safety of a ship or saving life at sea, or
- 6) fuels used in a ship necessitated by damage sustained to it or its equipment, provided that all reasonable measures are taken after the occurrence of the damage to prevent or minimise excess emissions and that measures are taken immediately to repair the damage.

Subsection 2. This order shall not apply to fuels used in non-road mobile machinery and agricultural tractors or diesel fuels as defined in the order on the quality of petrol, diesel fuels and gas oil intended for use in motor vehicles, etc.

Subsection 3. This order shall not apply to:

- 1) fuel oils used in combustion plants covered by the provisions of the order on the limitation of emissions of certain pollutants into the air from large combustion plants, or
- 3) fuel oils used in other combustion plants located in companies covered by annex 1 or 2 of the order on approval of listed activities (the approval order), but which are not covered by no. 1, when the approved sulphur dioxide emissions from those combustion plants do not exceed 1,700 mg/Nm³ at an oxygen content in the flue gas of 3% by volume on a dry basis.

Subsection 4. This order shall not apply to fuel oils used in combustion plants at refineries if:

- 1) the combustion plant is covered by the provisions of the order on the limitation of emissions of certain pollutants into the air from large combustion plants, or
- 2) the combustion plant, which is not covered by no. 1, forms part of an overall approval of the refinery where the average monthly sulphur dioxide emissions of all plants in the refinery, irrespective of the type of fuel or fuel combination used, does not exceed 1,700 mg/Nm³.

Section 4. Chapter 3 shall apply to:

- 1) Danish ships in Danish and international waters,
- 2) foreign ships in Danish territorial waters,
- 3) offshore platforms in Danish territorial waters and in the exclusive economic zone,
- 4) ports, and
- 5) suppliers of marine fuels.

Chapter 2

Fuels, other than marine fuels

Section 5. Fuels, other than marine fuels, may only be used if they comply with the following limit values for sulphur:

- 1) 0.9% by weight for coal and other solid fossil fuels,
- 2) 1.0% for petcoke,
- 3) 1.0% by weight for fuel oils, and
- 4) 0.1 % by weight for gas oil.

Subsection 2. The limit values for solid fossil fuels, cf. subsection 1(i) and (ii) apply to fuels with a water content of 0 % by weight and are reduced proportionally where the water content is above 0% by weight.

Section 6. The Danish Environmental Protection Agency may permit the use of coal and other solid fossil fuels with sulphur contents higher than those stated in section 5.

Subsection 2. Applications for permits in accordance with subsection 1 shall be written. The application shall be submitted to the Danish Environmental Protection Agency. The application shall state why for technical reasons it is necessary to use such fuels in the production, or it shall include substantiation that the use of a desulphurisation plant or other method will achieve a reduction of the sulphur dioxide emissions equal to the use of fuels that comply with the limit values in section 5.

Chapter 3
Marine fuels
Placing on the market

Section 7. Marine fuels may not be placed on the market if their sulphur content exceeds:

- 1) 0.1% by weight for marine gas oil,
- 2) 1.5% by weight for marine diesel fuels, and
- 3) 4.5% by weight for other marine fuels.

Subsection 2. Any person who places marine fuels on the market shall, when delivering to ships with a gross tonnage greater than 400 or their bunkering facilities in port and to offshore platforms, provide a bunker delivery note with the information stated in annex 1 to the person mentioned in section 9.

Subsection 3. Any person who places marine fuels on the market shall, when delivering to ships with a gross tonnage greater than 400 and to offshore platforms, together with the person mentioned in section 9, sign and seal a representative sample of the fuel delivered. The sample shall not be signed and sealed until the bunker operation has been finalised and shall, subsequently, be kept in accordance with section 9.

Subsection 4. Any person who places marine fuels on the market shall keep a copy of the signed bunker delivery note, cf. section 9, for at least three years from the time of delivery. The note shall be shown upon request by the controlling authority.

Subsection 5. The regulations in subsection 3 shall, insofar as the sealed sample is concerned, not apply to ships engaged in domestic trade.

Section 8. Any person who places marine fuels on the market shall provide written information to the Danish Environmental Protection Agency including the person's name, address, Central Business Register (CVR) number and Central Business Register Production unit (CVR-P) number not later than 14 days prior to commencing marketing.

Obligations upon receipt of fuel

Section 9. The master of the ship, the operator of the offshore platform or any other person thus authorised shall sign for the receipt of the delivery of the fuel on a copy of the bunker delivery note when the bunker operation has been finalised. The original bunker delivery note shall be retained under the control of the ship or offshore platform for at least three years from the time of delivery. The note shall be shown upon request by the controlling authority.

Subsection 2. For ships engaged in regular service using their own bunkering facilities in port, the bunker delivery note may be signed by the person responsible for these facilities. The original bunker delivery note may, subsequently, be retained by the shipping company, but a copy of the note shall be kept on board the ships.

Subsection 3. The master of the ship, the operator of the offshore platform or any other person thus authorised shall confirm receipt of the sample on the sample of the delivered fuel stipulated in section 7. The fuel sample shall be kept by the ship or the offshore platform until the fuel in question has been consumed, but in no case less than 12 months following the time of delivery.

Subsection 4. Ships engaged in regular service may choose to keep the fuel sample with the shipping company, and in this connection confirmation of receipt of the sample may be made by the persons responsible for the bunkering facility in the port.

Subsection 5. The provisions of subsections 1-4 shall not apply to ships only engaged in domestic trade as regards the sealed representative sample.

Use

Section 10. Marine fuels with a sulphur content exceeding the following limits shall not be used:

- 1) 4.5% by weight, cf. however sections 11-13.
- 2) 3.5% by weight from 1 January 2012, cf. however sections 11-13.
- 3) 0.50% in weight from 1 January 2020, cf. however sections 11-13.

Subsection 2. Furthermore, marine fuels shall comply with the following requirements:

- 1) If the fuel consists of mixtures of hydrocarbons from refining of crude oil, only small quantities of additives with the intention of improving performance may be added.
- 2) The fuel shall be free from inorganic acid.
- 3) The fuel shall not contain any added substance or chemical waste which:
 - a) endangers the safety of ships or has a negative influence on the performance of the machinery, or
 - b) is harmful to the crew, or
 - c) may generally contribute to further air pollution.

Subsection 3. Subsection 1 does not apply to marine fuels used on board offshore platforms to:

- 1) incinerate substances originating exclusively and directly from exploration, extraction and the associated treatment on the platform of mineral deposits in the seabed, including the incineration of hydrocarbons and excavations, mud and drilling fluids when drilling and test drilling, as well as incineration arising from critical situations;
- 2) operate combustion engines or turbines used exclusively for the exploration, extraction and related treatment on the platform of mineral deposits from the seabed.

Tightened regulations for the use of marine fuels

Section 11. Passenger ships operating regular services to and from ports in the European Community shall not use marine fuels with sulphur contents higher than 1.5% by weight.

Section 12. Marine fuels with sulphur contents higher than 1.5% by weight shall not be used in Sulphur Oxide Emission Control Areas. From 1 January 2015, marine fuels with sulphur contents higher than 0.1% by weight shall not be used.

Subsection 2. If the ship also uses fuels with sulphur contents higher than that mentioned in subsection 1, sufficient time shall be allowed for the fuel system to be fully flushed in order for the low-sulphur fuel to be used immediately upon entrance into a Sulphur Oxide Emission Control Area.

Subsection 3. The Baltic Sea Area and the North Sea Area, cf. section 5 of the Marine Environment Protection Act (*lov om beskyttelse af havmiljøet*), are Sulphur Oxide Emission Control Areas.

Section 13. Fuel with a sulphur content exceeding 0.1% by weight may not be used on inland waterway vessels and ships at berth.

Subsection 2. Ships at berth shall use a fuel complying with the requirements in subsection 1 as soon as possible after arrival at berth and as late as possible before departure.

Subsection 3. Subsection 1 shall not apply:

- 1) whenever, according to published timetables, ships are due to be at berth for less than two hours;
- 2) to inland waterway vessels that carry a certificate proving conformity with the International Convention for the Safety of Life at Sea, 1974, as amended, while those vessels are at sea; and
- 3) to ships at berth which switch off all engines and use shore-side power.

Section 14. The changeover between fuels complying with the requirements of sections 10-13 and other marine fuels shall be recorded in each case in the ship's logbook, including information on the content of the fuel mentioned in sections 10-13 in each tank with this content, as well as the date, time and the ship's position. Recording shall be for such time where the fuel system has been rinsed through.

Emission abatement technology and alternative methods

Section 15. The Danish Environmental Protection Agency may permit trials of ship emission abatement technologies. When carrying out these trials, the use of marine fuels complying with the requirements of sections 11-13 shall not be required, provided that:

- 1) all ships involved shall install tamper-proof equipment for the continuous monitoring of flue gas emissions and use it throughout the trial period,
- 2) no ships involved shall achieve emission reductions which are poorer than those achieved through the limits on sulphur in fuel specified in sections 11-13,
- 3) there shall be proper waste management systems in place for any waste generated by the emission abatement technologies throughout the trial period, and
- 4) assessment of the impact on the marine environment, particularly ecosystems in enclosed ports, harbours and estuaries shall be made throughout the trial period.

Subsection 2. The Danish Environmental Protection Agency may lay down further terms than those mentioned in subsection 1.

Subsection 3. An application for a permit pursuant to subsection 1 shall be written. The application shall be submitted to the Danish Environmental Protection Agency. The application shall contain information detailed enough for assessing whether the terms mentioned in subsection 1 can be complied with.

Section 16. The permit pursuant to section 15 shall state the earliest date at which the trial may commence and by when it shall be completed. The date of entry into force shall be at least six months after the Danish Environmental Protection Agency has granted the permit, and the permit may be given for a period of no longer than 18 months.

Subsection 2. The person responsible for the trial shall, no later than six months after completion of the trial, and at his expense, make full results publicly available and submit these to the Danish Environmental Protection Agency and the European Commission.

Section 17. The Danish Environmental Protection Agency may grant derogation from the requirements on sulphur contents set out in section 10 if the ship is using an alternative method that is just as effective as regards emission abatement as prescribed by section 10.

Subsection 2. The Danish Environmental Protection Agency may grant a Danish ship exemption from the requirements on sulphur content stipulated in sections 11-13 when the ship uses an abatement technology approved according to the regulations of Directive 1999/32/EC, as amended by Directive 2005/33/EC.

Subsection 3. An application for a permit pursuant to subsections 1 and 2 shall be written. The application mentioned in subsection 2 shall be submitted to the Danish Environmental Protection Agency. The application shall contain information detailed enough for assessing whether the terms mentioned in subsection 4 can be complied with.

Subsection 4. A permit pursuant to subsection 2 shall include terms stipulating that:

- 1) the ship shall continuously achieve sulphur emission reductions which are at least equivalent to those achieved through the quality requirements for the fuel specified in sections 11-13,
- 2) waste streams from the system discharged into enclosed ports, harbours and estuaries shall have no impact on ecosystems.

Subsection 5. The Danish Environmental Protection Agency may lay down further terms than those mentioned in subsection 4 as well as terms for permits pursuant to subsection 1.

Subsection 6. A foreign ship may deviate from the requirements on the sulphur content stipulated in section 10 when the ship uses an alternative method approved by the ship's flag State as being just as effective in terms of emission reductions as prescribed by section 10.

Subsection 7. A foreign ship may deviate from the requirements of sections 11-13 when the ship uses an abatement technology approved by the ship's flag State pursuant to the provisions of Directive 1999/32/EC, as amended by Directive 2005/33/EC.

Chapter 4

Reception facilities

Section 18. In ports where ships call in order to deliver residues from exhaust gas cleaning, the port authority or the person responsible for the port or the site shall ensure that reception facilities for such waste are established.

Chapter 5
Supervision, complaints and penal provisions

Section 19. The local authorities shall supervise:

- 1) compliance with the limit values stipulated in section 5, and
- 2) compliance with the terms stipulated in connection with permits pursuant to section 6.

Subsection 2. The local authorities shall carry out supervision through sampling of the liquid fuels with sufficient frequency and in such a way that the samples are representative of the fuel examined.

Subsection 3. The local authorities shall prepare a brief annual report on its supervision activities in pursuance of subsection 2, including information on whether accredited laboratories have been used in connection with sampling and sample analyses and on the methods applied, cf. section 2. The report shall be received by the Danish Environmental Protection Agency no later than 31 May in the year following the year the report concerns.

Section 20. The supervision activities mentioned in section 19(1)(i) and (ii) shall be carried out by Environment Centre Roskilde, Environment Centre Odense and Environment Centre Aarhus for companies covered by these centres' approval or supervision competence pursuant to the order on the approval of listed activities.

Subsection 2. The Environment Centres perform their powers in pursuance of subsection 1 within the boundaries appearing in annex 1, paragraph 1, of the order on the delegation to the Danish Environmental Protection Agency and State Environmental Centres under the Ministry of the Environment of certain powers in the environmental protection act, the preparedness act and the competition act.

Section 21. Supervision and control of compliance with the provisions set out in sections 7-18 of this order shall be carried out by the Danish Environmental Protection Agency with assistance from the Danish Maritime Authority with regard to supervision of ships and the Danish Energy Authority with regard to supervision of offshore platforms.

Subsection 2. Sampling shall be carried out with sufficient frequency, in sufficient quantities, and in such a way that the samples are representative of the fuel examined, and of the fuel being used by ships while in relevant sea areas and ports.

Subsection 3. As a basis, the following sampling, analysis and inspection methods shall be applied:

- 1) Sampling of marine fuel for on-board combustion during delivery to a ship, following the guidelines in annex 13 (revised annex VI) of the MARPOL Convention with subsequent analysis of its sulphur content.
- 2) Sampling and analysis of the sulphur content of marine fuel for on board combustion contained in fuel tanks, where feasible, and in sealed bunker samples on board ships.
- 3) Inspection of the ship's logbook and bunker delivery notes.

Section 22. The Danish Environmental Protection Agency may detain ships using marine fuels with a sulphur content higher than that permitted in sections 11-13 until the conditions have been brought in compliance with the regulations.

Subsection 2. Ships which, according to the bunker delivery note, use fuels with a sulphur content higher than that permitted in sections 11-13 may be detained until the conditions have been brought in compliance with these regulations.

Subsection 3. When assessing whether a ship is to be detained pursuant to subsection 2, the following circumstances may, inter alia, be included:

- 1) Whether the person responsible for the ship can document the measures taken to meet the requirements of this order.
- 2) Whether the person responsible for the ship can document that attempts have been made, within the ship's route, to buy prescriptive fuel and that this was not possible, including whether the person responsible for the ship has informed the authorities that it has not been possible to buy prescriptive fuel since it has not been accessible within the ship's route.

Section 23. The reference method adopted for determining the sulphur content of liquid fuels shall be that defined by:

- 1) DS/EN/ISO 8754 (1992) and PrEN ISO 14596 for fuel oil and marine fuels, and
- 2) DS/EN 24260 (1987), DS/EN/ISO 8754 (1992) and PrEN ISO 14596 for other gas oil.

Subsection 2. PrEN ISO 14596 shall be the method chosen in connection with arbitration.

Subsection 3. The statistical interpretation of the verification of the sulphur content of the gas oils used shall be carried out in accordance with DS/EN/ISO standard 4259 (1992).

Section 24. Complaints against decisions made under this order by the Danish Environmental Protection Agency cannot be brought before any other administrative authority.

Section 25. Unless a more severe penalty is due under other legislation, fines shall be imposed for any person who:

- 1) uses fuels, including marine fuels, with a sulphur content higher than the values mentioned in sections 5 and 10-13 without a permit pursuant to sections 6, 15 or 17;
- 2) violates the terms stipulated in a permit pursuant to section 6, 15 or 17;
- 3) places on the market marine fuels with a sulphur content exceeding the one mentioned in section 7(1);
- 4) omits to produce a signed bunker delivery note or provides incorrect information in the note, cf. section 7(2);
- 5) omits to sign for, seal and keep a representative fuel sample, cf. section 7(3);
- 6) omits to keep a copy of the signed bunker delivery note, cf. section 7(4);
- 7) omits to notify as stipulated in section 8;
- 8) omits to sign for or keep a bunker delivery note or to sign on or keep a fuel sample in accordance with section 9;
- 9) omits to record as described in section 14 or states incorrect information in the ship's logbook;
- 10) omits to report on trials in accordance with section 16(2); or
- 11) omits to establish a reception scheme in accordance with section 18.

Subsection 2. The penalty may increase to imprisonment for up to two years if the violation was committed intentionally or through gross negligence and if said violation:

- 1) has damaged the environment or produced a risk of damage, or
- 2) has resulted in or aimed at a financial benefit, comprising also financial savings, for the person committing the violation, or for others.

Subsection 3. Subsection 2 shall not apply to violations committed from foreign ships unless the violation is committed in inner territorial waters. The penalty may be increased to imprisonment for up to

two years for violations committed from foreign ships in outer territorial waters if the violation was intentional and resulted in serious contamination of the marine environment.

Subsection 4. Companies etc. may be liable to punishment according to the provisions in Part 5 of the Penal Code.

Chapter 6
Entry into force

Section 26. This order shall enter into force on 28 September 2010.

Subsection 2. Order no. 1663 of 14 December 2006 on limiting the sulphur content of liquid and solid fuels shall be repealed.

Ministry of the Environment, 19 September 2010
Karen Ellemann / Anne-Marie Rasmussen

Information to be included in the bunker delivery note

1. Name and IMO no. of the recipient ship.
2. Name of the port in which the marine fuel is delivered.
3. Date of delivery.
4. Name, address and telephone number of the supplier of the fuel to ships.
5. Name(s) of the product(s).
6. Quantity in tonnes (metric tonnes).
7. Density at 15° C, kg/m³.
8. The sulphur contents of the oil in question (% by weight).
9. A statement signed by the supplier or the supplier's representative confirming that the fuel delivered is in compliance with the requirements in section 7(1) or section 12(1) and section 7(2).