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Order regarding air pollution from solid fuel combustion plants under 1 MW¹⁾

Pursuant to § 7(1)(1) and (5), § 7a(1) and (2), § 16(1) and (3), § 18(1), § 67, § 92 and § 110(3) and (4) of the Environmental Protection Act (see Consolidation Act No 879 of 26 June 2010, as amended by Act No 1273 of 21 December 2011 and Act No 1149 of 11 December 2012), the following is hereby laid down:

Chapter 1 *Scope and definitions*

§ 1. This order applies to solid fuel combustion plants with a total nominal heat input of less than 1 MW.

§ 2. For the purposes of this order, the terms below shall have the following meanings:

- 1) Combustion plant: a technical system in which solid fuel is burned with a view to using the generated heat, including pellet burners for separate retrofitting for such plants. Other burners are considered to be part of the combustion plant.
- 2) Space heater: combustion plant with doors with or without a water tank, designed to directly heat the surroundings, including wood-burning stoves, fireplace inserts, pellet ovens, masonry ovens, sauna ovens and similar fixed energy production plants.
- 3) Central heating boiler: combustion plant with a boiler for heating water for consumers and/or central heating, not designed to give directly heat the space where it is located.
- 4) Fireplace insert: plant with or without a door, designed to be installed in the opening to a fireplace or the firebox of an open fireplace.
- 5) Pellet burner (stoker): device for the automatic burning of wood pellets, for which there may be several types of control; on-off, mechanical, modulating or with several steps, into which pellets can be fed horizontally, from above or from underneath.
- 6) Other burners: device for the for automatic burning of comminuted wood, including wood chips, sawdust, etc., except for wood pellets, for which there may be several types of control; on-off, mechanical, modulating or with several steps, where the pellets can be vertically fed in, from the oven or from below.
- 7) Solid fuel: fuel in the form of wood, plant kernels, wood briquettes, wood pellets or other residual products covered by the Biomass Waste Order.

¹ This order has been notified as a draft in accordance with Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 on an information procedure in the field of technical standards and regulations and rules, as amended by Directive 98/48/EC.

- 8) The types of solid fuel with which the combustion plant under 1 MW may have been tested according to the test certificate mentioned in § 7 are:
 - a. natural wood in large pieces, with or without bark, especially in the form of firewood, wood chips and branches and cones,
 - b. comminuted natural wood, particularly in the form of sawdust, shavings or ground dust,
 - c. briquettes from natural wood in the form of wood briquettes in accordance with DS/EN 14961-3 or in the form of wooden pellets in accordance with the technical fuel requirements in DS/EN 14961-2, as well as other wooden pellets made of natural wood of the same quality,
 - d. straw and similar plant materials, corn not intended to be used for food, as well as entire corn plants, corn waste, chaff and straw residues, as well as pellets of these types of fuel.
- 9) Combustion principle: manual or automatic feeding of the fuel.
- 10) Plant type: series of combustion plants with identical combustion characteristics or series of pre-fabricated sections designed for the construction of combustion plants.
- 11) Unit: single example of a plant type.
- 12) Historical space heaters: units constructed or built before 1940.
- 13) Placement on the market: the first time a combustion plant is made available on the market (regardless of the method of sale) for distribution or use, either for payment or free of charge.
- 14) Test certificate: document certifying that the given combustion plant is in accordance with this order.

Chapter 2

Requirements for combustion plants

§ 3. §§ 4–9 do not apply to the following:

- 1) masonry stoves and tiled stoves built on the relevant property,
- 2) historical space heaters constructed in listed buildings under the Building Preservation Act, or buildings covered by Annex 1 of the Museum Act,
- 3) individually produced copies of historical space heaters constructed in listed buildings under the Building Preservation Act, or buildings covered by Annex 1 to the Museum Act,
- 4) existing combustion plants which are being disassembled for repair or restoration and will then be placed back into the same building, unless the repair or restoration is so extensive that the majority of the combustion plant is being replaced,
- 5) existing combustion plants installed in a property, which are being sold or transferred.

§ 4. Combustion plants may only be commissioned, transferred or connected when they observe the limit values in Annex 1 for space heaters and Annex 2 for central heating boilers.

(2) Compliance of a combustion plant with the requirements in Annex 1 or Annex 2 shall be documented in a test certificate issued and signed by a measurement laboratory or testing institute mentioned in § 10.

(3). The compliance of serially-produced combustion plants with Annexes 1 and 2 is considered to have been satisfied by the testing of a single unit in the series, if production control for the specific plant is simultaneously carried out in accordance with the applicable test standard.

(4) For a series of combustion plants, only the largest and smallest models need be tested if the ratio between their nominal heat outputs does not exceed 1:2 for central heating boilers and 1:1.6 for space heaters. If the ratio is exceeded, one or more further medium-sized units are tested, so that the ratio between the smallest and largest unit in each size category is not exceeded.

§ 5. Central heating boilers (see Annex 2) that are not serially produced or where it is necessary to conduct on-the-spot testing, compliance with § 4(1) is considered to be documented by testing of the largest unit, with any cleaning technology. This can also be done by documentation in the form of measurements performed on a documented unit with identical incineration technology, with any cleaning technology.

§ 6. A copy of the test certificate and any documentation of production control shall be retained by the person responsible for connecting a combustion plant, so long as this person owns the combustion plant, though for no more than 10 years.

(2) Producers or importers of combustion plants shall retain the test certificate and any documentation of production control for 10 years from the date when the combustion plant in question or the last unit of the plant type in question is placed on the market.

§ 7. In combustion plants installed after the order's entry into force, combustion may only take place using the combustion principle and those types of solid fuel for which the combustion plant has been tested and approved, as shown in the test certificate.

§ 8. The person responsible for connecting a combustion plant shall, at his expense, have the chimney sweep certify the test certificate with a signature and date for the signature.

§ 9. Combustion plants that do not comply with this order can be exhibited at fairs and exhibitions, and well as in demonstrations and the like. It must be clearly apparent from signage at the demonstration that the combustion plant in question is not compliant with this order and that it cannot be commissioned, transferred or connected until there is evidence that the requirements in this order have been met.

Chapter 3 *Measurements and certificates*

§ 10. The measurements to document that the limit values in Annexes 1 and 2 have been complied with shall be carried out as accredited tests. The measuring laboratory or testing institute shall, at the time of the test, be accredited for testing according to the relevant standards for combustion plants and accredited to determine the current substances in the flue gas by the Danish Accreditation and Metrology Fund or a corresponding accreditation body that is party to the EA or ILAC multilateral mutual recognition agreements.

(2) Measurements to document that the limit values in Annex 1 have been complied with may, however, be carried out by a measurement laboratory or testing institute which, at the time of the test, has been notified in accordance with the NANDO information system under the EU regulations for building products to the relevant standards for space heaters, as well as accredited to assess dust in the flue gas.

(3) The measurement laboratory or testing institute issues and signs a test certificate on the basis of the test in (1) or (2), documenting that the combustion plant meets the order's requirement

relating to observance of the limit values in Annex 1 with respect to space heaters and Annex 2 with respect to central heating boilers and loose pellet burners.

(4) The test certificate shall be written in Danish or English and contain the following information:

- 1) Name and address of the person who has ordered the test. Companies shall also state their CVR (Danish Central Business Register) number and P number (location number).
- 2) Description of the combustion plant, including its make, model name, heat input for pellet burners and heat output for central heating boilers and space heaters (to be given per fuel type), combustion principle (to be given per fuel type) and which type of fuel was used during the test.
- 3) Name and address of the measuring laboratory or testing institute, as well as its accreditation number, including any notification number in the NANDO Information System, as well as confirmation that the test was undertaken after the time of accreditation and any notification.
- 4) The test method used.
- 5) The values measured under the conditions shown in Annex 1 or 2.
- 6) The certification by the measurement laboratory or the testing institute that the combustion plant complies with the limit values in Annex 1 or 2.
- 7) The place and date of issue for the certificate and the name and position of the person from the measurement laboratory or testing institute who has signed it.

Chapter 4 *Height of flue system*

§ 11. Flue systems installed or substantially modified after this order enters into force shall, with respect to connected combustion plants for solid fuel up to and including 30 kW,

- 1) on a roof sloping up to 20°, rise at least 40 cm above the ridge of the roof or be at least 1 metre from the roof surface,
- 2) on a roof sloping over 20°, rise at least 40 cm above the ridge of the roof or have a horizontal distance to the roof surface of at least 2 m and 30 cm.

(2) Flue systems outlets installed or significantly modified after the publication of this order must extend at least 1 metre above the upper edges of ventilation inlets, windows or doors within a 15-metre radius, if they are connected to combustion plants with a total heating output up to and including 30 kW.

Chapter 5 *Specifically for central heating boilers with a nominal heat input exceeding 120 kW*

§ 12. Installation of a central heating boiler with a nominal heat input exceeding 120 kW shall be registered with the supervisory authority at least eight weeks prior to the planned commissioning date.

- (2) The registration shall document that the limit values in Annex 2 are respected.
- (3) The registration obligation is considered to have been met when the supervisory authority has received the documentation under § 10.
- (4) In particularly acute cases where, for example, there is a risk of harm to people, animals, buildings, etc., the municipal authority may derogate from the requirement in (1).

§ 13. If the supervisory authority has raised objections prior to the planned commissioning date — see § 12(1) — the plant can be commissioned.

(2) If the registered central heating boiler has not been commissioned within two years after the registration under § 12(1) has been received, the registration shall be resubmitted to the supervisory authority, if the desire is to commission the boiler.

Chapter 6 *Supervision*

§ 14. The Danish Environmental Protection Agency shall monitor compliance with the rules in §§ 3–6 and §§ 8–10. The municipal authority shall monitor compliance with the rules in § 7 and §§ 11–13.

(2) This order does not prevent the supervisory authority from issuing a decision with obligations or prohibitions in accordance with § 41 or § 42 of the Environmental Protection Act.

(3) This order does not prevent the supervisory authority from issuing a decision laying down stricter requirements for the operation of combustion plants in enterprises subject to approval, in accordance with § 33 or § 41 of the Environmental Protection Act.

(4) Appeals against the supervisory authority's decisions under (2) and (3) may not be lodged with another administrative authority.

§ 15. The municipal authority may oblige the owner of a central heating boiler subject to approval to undertake measurements at his own expense in order to verify that the limit values in Annex 2 are being respected.

(2) The municipal authority may grant exemptions from the limit values in Annex 2 for straw boilers. However, no exemption may be granted from the requirement that straw boilers must meet the requirements in boiler class 3 in standard EN 303-5 or equivalent.

§ 16. The Danish Environmental Protection Agency may require documentation for:

- 1) compliance with the order,
- 2) production control in the company, and
- 3) adherence to procedures for certification of relevant harmonised standards.

Chapter 7 *Municipal regulations*

§ 17. The municipal authority may, by regulation, lay down provisions regarding pollution control measures for solid fuel combustion plants, in specific clearly-defined areas in the municipality where it is adequately shown to be required on environmental grounds.

(2) The municipal authority publishes regulations adopted under (1).

(3) An adopted regulation under (1) does not prevent the municipal authority from issuing requirements in accordance with §§ 33, 41 or 42 of the Environmental Protection Act for further measures to restrict pollution for specific combustion plants beyond those stated in the regulation.

(4) Appeals against the municipal authority's adoption of a regulation under (1) may not be lodged with another administrative authority.

Chapter 8
Penalties

§ 18. Unless higher penalties are stipulated by other legislation, a fine will be imposed on anyone who

- 1) commissions, transfers or connects a combustion plant in violation of § 4,
- 2) fails to archive documentation in accordance with § 6,
- 3) fails to install a chimney in accordance with § 11,
- 4) fails to register the installation of a central heating boiler in accordance with § 12,
- 5) commissions a central heating boiler in violation of § 13, or
- 6) fails to submit documentation stipulated in § 16.

(2) The penalty may increase to 2 years' imprisonment if the infringement was committed wilfully or through gross negligence, and said infringement:

- 1) caused damage to the environment or brought about a risk thereof, or
- 2) achieved or intended to achieve a financial benefit for the parties concerned or others, including savings.

(3) The municipal authority can set the fine for violating rules in regulations issued pursuant to § 17 (1).

(4) Companies, etc. (legal persons) may be rendered criminally liable in accordance with the rules of Chapter 5 of the Penal Code.

Chapter 9
Entry into force and transitional provisions

§ 19. This order shall enter into force on [date].

(2) The limit values in Annexes 1 and 2 for plants that are commissioned, transferred or connected only enter into force six months after the order's entry into force. During this period, the emission limits in the previously applicable Order No 1432 of 11 December 2007 continue to apply.

(3) Straw boilers in rural areas must, however, only adhere to the limit values for particles in the Annexes to the order from 1 January 2018.

(4) Combustion plants (including fireplace inserts), which are built on the relevant property without using mass-produced pre-fabricated sections or built according to measurements for a particular location, only need to meet the requirements in this order two years after its entry into force.

(5) Historical space heaters and individually-constructed copies of historical space heaters that are not in listed buildings under the Building Preservation Act or buildings covered by Annex 1 of the Museum Act only need to meet the requirements in this order two years after it enters into force.

§ 20. Order No 1432 of 11 December 2007 on regulating the air pollution generated by wood-burning stoves and boilers and certain other fixed installations for energy production is repealed.

The Danish Ministry of the Environment,

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Annex 1

Limit values/emission requirements for space heaters

Space heaters with and without water tanks shall observe the limit values for dust and organic gaseous carbon (OGC), though only for one of the test methods for dust:

Substance	Limit value	Measurement principle	Test method
Dust	5 g/kg, and a maximum emission of 10 g/kg in the individual test intervals	Dilution tunnel	NS 3058-1 and NS 3058-2 (calculated using NS 3059, class 1 or 2, depending on the size of the combustion plant) or a comparable standard for measuring particle emissions from space heaters recognised in the EU, EFTA countries or Turkey.
	40 mg/normal m ³ at 13 % O ₂	Directly in the flue gas channel	Relevant harmonised product standard, or if this does not contain a description of emission measurement methods, then CEN/TS 15883, Annex A.1 (Residential solid fuel burning appliances - Emission test methods), or an equivalent standard for measuring particle emissions from space heaters, which is recognised in the EU, EFTA or Turkey.
OGC	150 mg C/normal m ³ at 13 % O ₂	Directly in the flue gas channel	Relevant harmonised product standard, or if this does not contain a description of emission measurement methods, then CEN/TS 15883, Chapter 4 (Residential solid fuel burning appliances - Emission test methods), or an equivalent standard for measuring OGC emissions from space heaters, which is recognised in the EU, EFTA or Turkey.

Two 2 years after order's entry into force, space heaters with and without water tanks shall meet the emission requirements for dust and OGC, though only for one of the test methods for dust:

Substance	Limit value	Measurement principle	Test method
Dust	4 g/kg, and a maximum emission of 8 g/kg in the individual test intervals	Dilution tunnel	NS 3058-1 and NS 3058-2 (calculated using NS 3059, class 1 or 2, depending on the size of the combustion plant) or a comparable standard for measuring particle emissions from space heaters recognised in the EU, EFTA countries or Turkey.
	30 mg/normal m ³ at 13 % O ₂	Directly in the flue gas channel	Relevant harmonised product standard, or if this does not contain a description of emission measurement methods, then CEN/TS 15883, Annex A.1 (Residential solid fuel burning appliances - Emission test methods), or an equivalent standard for measuring particle emissions from space heaters, recognised in the EU, EFTA or Turkey.
OGC	120 mg C/normal m ³ at 13 % O ₂	Directly in the flue gas channel	Relevant harmonised product standard, or if this does not contain a description of emission measurement methods, then CEN/TS 15883, Chapter 4 (Residential solid fuel burning appliances - Emission test methods), or an equivalent standard for measuring OGC emissions from space heaters, which is recognised in the EU, EFTA or Turkey.

Annex 2

Limit values/emission requirements for central heating boilers (0–1 MW)

Combustion principle	Emission principle values			Test method Documentation of limit values according to a standard or method sheet No **
	OGC mg C/normal m ³ at 10 % O ₂	CO mg/normal m ³ at 10 % O ₂	Dust mg/normal m ³ at 10 % O ₂	
Manual	30	700	60	EN 303-5 for laboratory tests.
Automatic*, including pellet burners for separate retrofitting in central heating boilers	20	500	40***	<p>If a central heating boiler is too large to be tested in a laboratory but small enough to be covered by EN 303-5, the producer/importer can choose to have it tested either in accordance with the EN 303-5 standard or the method sheets below.</p> <p>Central heating boilers that are too large to be covered by EN 303-5 shall be tested on-site according to the standards stated in the method sheets published by the Danish Environmental Protection Agency's Reference Laboratory for measurement of emissions into the air: MEL-02 on determination of the concentration of total particulate matter in flowing gas and MEL-06 on determination of carbon monoxide (CO) in flowing gas and MEL-07 on determination of the concentration of gaseous TOC (total organic carbon) in flowing gas (flame ionisation detector) or equivalent emission measuring standards recognised in the EU, EFTA or Turkey. The testing institute must be accredited according to the standards specified in the method sheets.</p> <p>Testing of pellet burners for separate retrofitting in central heating boilers is made in accordance with the test method described in EN 15270 or an equivalent standard.</p>

* Automatically fired central heating boilers that can be downscaled can be tested at nominal maximal load until 31 December 2019, after which boilers larger than 20 kW shall also be tested at low load, as stated in the standard.

** See the website of the Danish Environmental Protection Agency's Reference Laboratory for measurement of air emissions (www.ref-lab.dk)

*** 100 mg/m³ for condensing plants larger than 500 kW.